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GENERAL STUDIES (TEST CODE : 1430)

Name of Candidate	DARPAN AHLUWALIA		
Medium Eng./Hindi	ENGLISH	Registration Number	214713
Center		Date	23rd JUNE '19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. Numismatics and epigraphy have played a significant role in reconstruction of ancient Indian history. Elucidate. **(150 Words) 10 Marks**

मुद्राशास्त्र (न्यूमिस्मेटिक्स) और पुरालेखशास्त्र (एपिग्राफी) ने प्राचीन भारतीय इतिहास के पुनर्निर्माण में एक महत्वपूर्ण भूमिका निभाई है। स्पष्ट कीजिए।

Ancient India has been reconstructed using various sources, including numismatics - study of coins and currency, and epigraphy - study of inscriptions.

Numismatics

- State of economy :-
The earliest coins in age of Mahajanapadas were punchmarked. The zenith was reached in the Gupta age with abundance of gold and silver coins.
From 90% gold during Chandra-Gupta I, it fell to 70% during Skandagupta. Later, there were lead / nickel / copper ones.

- Portraits of royalty :-
Earliest ones were Kushanas with deity on reverse, and king on obverse.
Guptas and Satavahanas are other examples, however in south, there were dynastic crests (fish / carp - Pandyas; Bow and arrow - Cheras; Tiger - Cholas).

- Rituals and palace scenes :-
Samudragupta playing veena; marriage scenes; sacrifices etc.

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- Foreign contacts / trade :-
  Eg: Ships on ~~Gold~~ coins of Vashishtaputra Pulamavi

- Others :-
  - Status of women : Metonymics in Satavahanas (Gautamiputra / Vashishthiputra)
  - Deities worshipped
  - Languages used (Guptas - Sanskrit)
  - Type of metals : Arthashastra mentions tamararupa coins (Cu), suvarnarupa (gold) and rupyarupa (silver).

Epigraphy

- Languages
  Eg: Ashoka : Prakrit in Brahmi script
  Greek and Aramaic (N/W India)

- Extent of empire
  Eg: Ashokan inscriptions found in Anuradhapura, Sri Lanka.

- Genealogy
  Eg: Rabatak inscription - Kushanas

- Socioeconomy & administration
  Eg: Satavahanas' land grants
  Mauryan Sohgaura - Famine works.

⇒ These continue to inspire even Modern India. Eg: Pandyan inscriptions to desilt water tanks to prevent water crisis.

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2. Elucidate the key features of the Indus Valley Civilization with examples from prominent archaeological findings. **(150 Words) 10 Marks**
प्रमुख पुरातात्विक खोजों से उदाहरण प्रस्तुत करते हुए सिंधु घाटी सभ्यता की महत्वपूर्ण विशेषताओं को स्पष्ट कीजिए।

Beginning with Mortimer Wheeler, and Marshall's archaeological findings, IVC has been reconstructed via following :-

- Technological progress :-
  - Use of burnt bricks, not mud bricks
  - Canals found at Shortughai
  - Drains at Mohenjodaro.

- Economy :-
  - Ploughed field in Kalibangan hints at agrarian economy.
  - Canals found at Shortughai.
  - Great granary excavated in Mohenjodaro.
  - Uniform sized weights and measures, seals and amulets have been found.

- Social Stratification :-
  - Division of the city into Western, higher and larger Citadel and smaller Lower Town.
  - 2 Types of spindles have been found - expensive faience, and cheap teracotta. Burials show presence of jewellery and expensive items.

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- Clothing:-
  - Cloth impressions have been found.
  - Presence of cotton and wool cloths.
  - Spindles of whorls excavated.

- Lifestyle:-
  - Jewellery, worn by both men and women.
  - Cosmetic items (eg - cinnabar) have been found.
  - Shell works at Nageshwar and Balakot, and bangle factory.

- Religion:-
  - Stones resembling yoni and phallus give an insight.
  - In Citadels, Pashupati Shiraji statues have been found, and in lower towns, statue of Mother Goddess.
  - Fire altars at Kalibangan

- Cause of decline:-
  - Mound of skeletons seen in Mohenjodaro. Skeletons have evidence of head trauma, TB etc.

⇒ All these findings point out towards our rich civilization, hence, its relevance in 'Dialogue of Civilization' views held globally.

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3. Netaji Subhas Chandra Bose was a far-sighted realistic leader with great diplomatic and military skills. Discuss in the context of his contribution to national freedom struggle. **(150 words) 10 Marks**

नेताजी सुभाष चंद्र बोस उत्कृष्ट राजनयिक और सैन्य कौशल रखने वाले एक दूरदर्शी यथार्थवादी नेता थे। राष्ट्रीय स्वतंत्रता संघर्ष में उनके योगदान के संदर्भ में इस पर चर्चा कीजिए।

The recent inauguration of Netaji's museum in Red Fort is an ode to his contributions, on his 123rd Birth anniversary.

Some of his contributions are:-

- DIPLOMATIC SKILLS
  - He negotiated with germans and USSR for support.
  - To defeat British, he befriended the Axis powers.
  - INA invaded North East along with Japanese.
  - He was given Shaheed and Swaraj islands by Japanese.
  - He set up Indian Legion with Indian POW given by germany.

- MILITARY SKILLS
  - He rebuilt Azad Hind Fauj in 1943.
  - Bose aroused the soldiers with words like, 'Give me blood, and I shall give you freedom.'
  - He included an all women Rani Jhansi

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regiment, and being led by Capt. Swaminathan.

- FAR SIGHTED REALIST
  - He believed freedom is not bestowed upon, it is taken.
  - Being against dominion status, he formed League for Independence. (1928)
  - He led the radical leftists under Forward Bloc. (1940)
  - In Haripura (1938), he formed the National Planning Committee.
  - Being a realist, he resigned in 1939 because of lack of Gandhi's support.
- POLITICAL ACUMEN
  - He coined the term 'Jai Hind' to arouse the masses.
  - Served as Calcutta Mayor and Pres, All India Youth Congress.

⇒ Although, alleged to have fascist sympathies, but actually he was the master of 'real politick', working for unconditional independence.

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4. Various internal and external factors shaped the national movement in India. Assess the significance of the period of the first world war in this context. **(150 Words) 10 Marks**

भारत में राष्ट्रीय आंदोलन को विभिन्न आंतरिक एवं बाह्य कारकों ने स्वरूप प्रदान किया। इस संदर्भ में प्रथम विश्व युद्ध की अवधि के महत्व का आंकलन कीजिए।

The first world war gave a new lease of life to the political vacuum since Surat split (1907). It was due to the following factors :-

- INTERNAL FACTORS :-
  - Economy : Taxes and inflation had increased. Diversion of resources created shortages. Loans drained the economy.
  - Coming of Gandhi : It gave way to 3rd phase of Congress. Having tasted success in Champaran, Ahmedabad and Kheda, he organized Rowlatt satyagraha, and Khilafat movement.
  - Lucknow pact (1916) : It brought together Hindu-Muslim unity, and reconciliation with Extremists.
  - Home Rule league : It had created a huge base under Tilak and Besant.
  - Government excesses : Eg : Jallianwala Bagh Massacre ; Rowlatt Act (1919) etc.

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- EXTERNAL FACTORS :-
  - Breakdown of myth of racial superiority
  - Revolutionary groups were gaining ground abroad. eg: Ghadar movement (1913, San Francisco)
  - Soldiers were treated unfairly abroad. Their victories also brought about self-confidence
    eg: Battle of Haifa (1919, Israel)

All these lead to increase in political awareness, rise in nationalism, and support by all sections (eg: Capitalists like TATAs, who got steel contract for rails in Mesopotamia etc.).

⇒ Thus, 1914-1919 was a very significant period, as evident by 1st Indian built war memorial built in France recently (commemorate 100 yrs of armistice).

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5. Enumerate the factors responsible for the decline of Mughal empire in India. How did it help in the expansion and consolidation of British power?
(150 Words) 10 Marks

भारत में मुगल साम्राज्य के पतन के लिए उत्तरदायी कारकों को सूचीबद्ध कीजिए। इसने ब्रिटिश शक्ति के विस्तार और सुदृढ़ीकरण में किस प्रकार सहायता प्रदान की?

Mughal empire always had inherent weaknesses. post Aurangzeb which led to rise of powerful regional groups, leading to 'flight of loyalty' and its decline.

- Inherent weakness :-
  - Lack of military reforms
  - No infusion of technology led to a weak army.
  - Corruption amongst Jagirdars, no less number of soldiers maintained.

- Religious causes :-
  - Alienation of Hindus via destruction of temples, imposition of jaziya etc.

- Crisis of personality :-
  - Weak successors accelerated decline.
  - Self aggrandisement was followed. (eg - Murshid Quli Khan; Jai Singh)

- Jagirdari crisis :-
  - It led to conflicts between Iranis and Turanis, and corruption.

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- Peasant unrest :-
  - There were zamindar led rebellions of peasants.
- Internal causes :-
  - Nadir Shah's and Abdali's invasions exposed weaknesses.
- Aurangzeb's role :-
  - Expansionism : He ignored North for 25 yrs due to his Bijapur, Golconda and Deccan campaigns.
  - No foresight : No alliance with Marathas or Rajputs.

⇒ British used it to expand and consolidate via :-

* Dupleix started intervening in Indian disputes. This was followed by British.
* Plassey conspiracy - Mir Jafar was bribed, hence the battle (1757) was won without hardly fighting.
* Subsidiary alliance (1798) - Intervention in internal matters, and maintenance of British army at Indian cost.

⇒ Finally, the Battle of Buxar (1764) led to permanent foothold.

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6. Enumerate the important features of Subsidiary Alliance policy during the British rule. How did this policy help in the expansion of the British rule in India? **(150 Words) 10 Marks**

ब्रिटिश शासन के दौरान सहायक संधि की नीति की महत्वपूर्ण विशेषताओं को सूचीबद्ध कीजिए। इस नीति ने भारत में ब्रिटिश शासन के विस्तार में किस प्रकार सहायता प्रदान की।

Subsidiary alliance was described by Wellesley as 'fattening the oxen, until fit for being devoured'.

Its features were :-

- Permanent British resident was stationed.
- Ruler had to dissolve his own army and maintain British Army at his own expense.
- He couldn't employ any European without British permission.
- No political relations with local rulers outside British say.
- The British promised to protect against internal rebellion/external attacks.

Thus, the Indian rulers starting with Hyderabad (1798), became virtual protectorates of the British.

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It led to British expansion because:-

- Resident interfered in internal matters although he was supposed to be neutral.
- The French threat was warded off as no alliances with Europeans could be forged.
- Army was maintained at ruler's expenses.
- Territory expanded as it was taken if ruler was unable to pay for army.
- There was complete control over foreign policies.

→ Finally, it was said that Wellesley, 'described Indian politics as threatening if turbulent, and if it was calm, he ruffled it.'

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7. Discuss the challenges that were specific to the process of post-independence integration of North East India. **(150 words) 10 Marks**
उन चुनौतियों पर चर्चा कीजिए जो स्वतंत्रता-पश्चात् पूर्वोत्तर भारत के एकीकरण की प्रक्रिया के लिए विशिष्ट थीं।

With 565 Princely states, post independence integration and consolidation was the most crucial challenge, especially in the North East.

It included challenges such as:-

- Colonial legacy
  - British treated it as separate from mainland, eg - Bengal Eastern Frontier Regulation, which led to their marginalization.
  - Criminal Tribes act, 1871 further increased the valienation.
  - It came under 'excluded' area under GoI Act, 1935.

- Poor socioeconomic indicators
  - The tea plantations didn't lead to any agricultural revolution.
  - Literacy rate was poor.
  - Indentured labour was prominent.

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- Migration :-
  - Migrants from Burma, East Pakistan and Tibet caused resource crunch.

- Heterogenosity :-
  - There were inter-tribal conflicts with more than 200 ethnic groups.

- Insurrections :-
  - Phizo's NNC declared independence on 14th Aug 1947, and later formed underground government.

- Geography :-
  - The hilly terrain and narrow connectivity was another issue.

- AFSPA :-
  - Tribals alleged human rights violations and power abuse.

⇒ However, with steps, ranging from post independence Tribal Panchsheel to NITI forum on North East, many of these challenges have been greatly mitigated

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8. What do you understand by New Social Movements in independent India? In this context, discuss the key features of the New Farmers' Movements.
(150 words) 10 Marks

स्वतंत्र भारत में 'नए सामाजिक आंदोलनों' से आप क्या समझते हैं? इस संदर्भ में, 'नए किसानों' के आंदोलनों की प्रमुख विशेषताओं पर चर्चा कीजिए।

New Social Movements are organized, alternative, transformatory and accumulative endeavours in desired direction.

For example;
- Movement against sexual crimes post Nirbhaya case '12
- #MeToo movement
- 'People's Watch' movement for citizen charter, etc.

→ They provide an organized platform for articulation of demands.

→ Some give rise to new political outfits. Others become an important vote bank.

→ However, some [perils] include majoritarianism (eg- cow vigilante), misconstrued feminism (eg- false cases against men), foreign funded NGOs etc.

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New Farmers' movement is characterized by:-

- ORIGIN : It is due to rising agrarian crisis and rural distress.
- EXAMPLES : Swabhiman Shetkari Sangathan, Maharashtra; Bhartiya Kisan Union, Punjab.
- DEMANDS : Loan waivers; subsidies on inputs like fertilizers, chemicals and electricity; higher MSP etc.
- EFFECT : They have led to creation of a strong non-political force, and vote bank. Appeasement politics has led to domino of loan waivers.
- LIMITATIONS :-
  - Not inclusive : eg: landless labourers, small and marginal farmers unimpacted by loan waivers.
  - Not female led : Feminization of agriculture (24% cultivators; 51% labourers) has occurred without increase in female leaders.

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9. Give an account of the the Iranian Revolution of 1979 and discuss its impact on the politics of West Asia. **(150 words) 10 Marks**

1979 की ईरानी क्रांति का विवरण दीजिए और पश्चिम एशिया की राजनीति पर इसके प्रभावों पर चर्चा कीजिए।

The toppling of the Shah and establishment of Islamist Republic created a major impact in Iran and rest of West Asia.

→ Account of the revolution :-

CAUSES
- Shah was alleged to be a US puppet.
- His liberalization efforts angered the orthodox Muslims (like female's right to vote).
- There was disregard for religion and culture of Iran.
- Political oppression by secret police.
- Corruption and autocracy.
- Immediate cause was economic decline in 1977-78.

⇒ 1951: Nationalization of Anglo-Iranian oil company (DE-NEOCOLONIZATION)
↓
CIA backed coup
Shah's absolute monarchy
↓
1979: Shah toppled
Theocratic Republic (Ayatollah Khomeini)

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It impacted West Asia by:-

- It changed the balance of power in West Asia.
- It was anti-West and against US influence, and antithetical to Sunni Saudi, Kuwait and Iraq.
- Iran wanted to further overthrow monarchies. Eg: Insurgencies in Saudi Arabia and Egypt.
- Iraq (Saddam Hussain) invaded Iran (1980).
- Position of females improved.
- US put sanctions on Iran.
- There was strengthening of the Revolutionary Guards army post Iraq invasion.

→ The effect continues as the instability in Middle East today, with recently, US declaring Revolutionary Guards as terrorist organization and JCPOA withdrawal.

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10. Though the conditions in France were vastly different from those in America, many of the driving factors behind the two revolutions were similar. Discuss in the context of French revolution. **(150 words) 10 Marks**
यद्यपि फ्रांस में परिस्थितियां अमेरिका की परिस्थितियों से बहुत भिन्न थीं, तथापि इन दो क्रांतियों के पीछे कई प्रेरक कारक समान थे। फ्रांसीसी क्रांति के संदर्भ में चर्चा कीजिए।

American (1776) and French (1789) revolutions were the first two modern revolutions of the history of mankind.
However, there are some stark differences:-

THEME	FRENCH	AMERICAN
* Cause	Internal colonialism - oppression of 3rd estate	British mercantile capitalism
* Leaders	Peasants and artisans	Progressive capitalists (Jefferson, Samuel Adams, George Washington)
* Goal	3rd estate aimed at collective rights	Individual rights
* Social changes	Changing rigid social hierarchy	No such goal.
* External support	None - fight against govt.	Supported by the French.

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The similarity in their driving factors was :-

- The economic cause and distress was rooted in the 7yrs war between Britain and France.
- They were inspired by ideals of Renaissance and Enlightment of freeing man from yoke of the State.
- 'No taxation without representation' was a common theme.
- It was against economic excesses.
  - America - Hat Act; Woollen act; Staple act; tax on essential items like tea (Boston Tea party)
  - France - Princely lives of Clergy and Nobility.
- Both didn't see immediate stability
  - America - Conflict between anti-slavery and industrialized North, and agrarian South.
  - France - Reign of terror under Jacobins.

⇒ Finally, both spread ideals to justice, liberty, equality and fraternity to rest of Europe.

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11. India has a long civilizational history. In this context, highlight the significant contributions from ancient India in science, mathematics and medicine. **(250 Words) 15 Marks**

भारत का सभ्यता संबंधी एक लंबा इतिहास रहा है। इस संदर्भ में, विज्ञान, गणित और चिकित्सा के क्षेत्र में प्राचीन भारत के महत्वपूर्ण योगदानों पर प्रकाश डालिए।

Ancient India was a land of sages and seers, and scholars and scientists both. Contributions include:-

- SCIENCE
  - Aryabhatta gave the theory of heliocentricity and eclipses, before Galileo and Copernicus.
  - Rotation of day was calculated in 'Aryabhatiya'.
  - Atomic theory was given by Kanad, before Dalton.
  - Science of metallurgy, like Mehrauli iron pillar's anti corrosiveness, and Akbar's seamless globe.
  - Science of hygiene was also prevalent, eg: network of drains with removable covers in Harappa and Mohenjodaro.

- MATHS
  - Science of Zero evolved.
  - Quadratic equations were solved by Brahmagupta.

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- Use of pi (π)
- Decimal system was mentioned by Bhaskara (Bijaganita).
- Dimensions of fire altars are given in Sulbasutras.
- Roots of Fibonacci numbers were in India - Pingala (Mauryan age).

- MEDICINE

- Atharva Veda contains a list of medicines for various illnesses.
- Sushruta Samhita by Sushruta (Gupta) mentions complex surgeries like rhinoplasty and cataract.
- First plastic surgery of the world.
- Charak samhita by Charak - Father of Indian Medicine; Kushana period.
- Ayurveda philosophy contains use of herbal elements for treating various illnesses.

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⇒ Thus, ancient India's contributions including Patanjali's Yogasutra hold relevance even today, with yoga being used as a tool of diplomacy.

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12. Provide an account of inscription and monuments that are chief sources of information about the Vijayanagara Empire. In this context, also highlight the key features of the Vijayanagara temple architecture.

(250 Words) 15 Marks

उन अभिलेखों और स्मारकों का विवरण प्रदान कीजिए जो विजयनगर साम्राज्य के संबंध में जानकारी के प्रमुख स्रोत हैं। इस संदर्भ में, विजयनगर मंदिर स्थापत्य की प्रमुख विशेषताओं पर भी प्रकाश डालिए।

Vijayanagara ~~gave~~ empire set up by Harihara and Bukka in 14th century, gave India a World Heritage site - Hampi. Rich information about this empire is derived from :-

- INSCRIPTION :-
  - Srirangam copper plate :-
    It has information on achievements of Bukka, the founder.
  - Devulapalli :-
    It has the genealogy of the Sangama dynasty.
  - Languages used :-
    They patronized Kannada, Telugu and Tamil.
  - Other information :-
    - Type of economy : Agrarian
    - Multiple references to horses
    - Vaishnavites
    - Extensive public waterworks

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- MONUMENTS :-

• Freizes :-
Consist of boar, horses (most common), elephants, and deities.

• Vitthala Temple :-
It has a large stone chariot and rayagopurams.

• Hazara Ram temple :-
It was a private place of worship.

• Mahanavami Tibba :-
For festivals and addresses by the emperor.

• Lotus Mahal :-
Part of the "Zenana" (queens).

• Virupaksha Temple :-
It has one of the largest gopurams.

• Elephant stables :-
Remains are present even today

- TEMPLES :-

• Style of architecture is Indo-Islamic.
• Large temple entrance towers are called rayagopurams.

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- Kalyanmandapa is the special ceremonial assembly hall.
- There is use of granite and bricks.
- There are intricately carved pillars (Indian style) and arches (Islamic style).
- Circumambulatory path is called as the pradakshina path.
- The style resembles more with the Dravidian style with temple tank also.

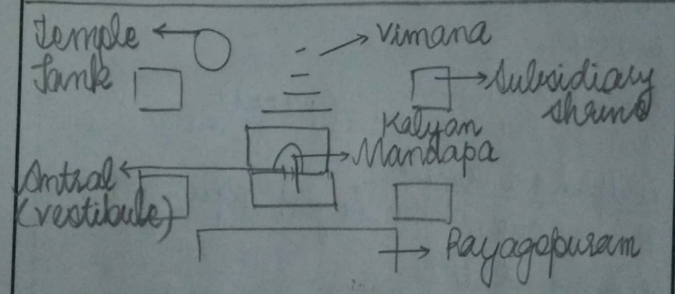

fig: Vijaynagara Temple

Thus, the rich legacy is even revered today.

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13. Critically discuss the contribution of the Indian capitalist class in the freedom struggle. **(250 Words) 15 Marks**
स्वतंत्रता संघर्ष में भारतीय पूँजीपति वर्ग के योगदान पर समालोचनात्मक चर्चा कीजिए।

The Indian capitalist class played a pivotal role in freedom struggle. It was enhanced post 1920, after World War-I's import substitution.

It was at the peak in Civil Disobedience movement. They contributed as :-

- Some joined INC, like Jamnalal Bajaj and Badilal Mehta.
- Some funded from outside, like A. Sarabhai and GD Birla.
- FICCI (1927) refused to negotiate with British without Congress.
- They boycotted Round tables as it didn't have Gandhi's support.
- They were capitalists but rejected Public Safety Bill (1928).
- Bombay Plan (1944) was one of the early attempts at planned economy in India.

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However, at times, contrarian attitudes have been seen :-

* Capitalists were against protracted struggle as it impacted them.
* They believed in constitutional and legal means only.
* They had fear of pro-socialists.
* Some are accused of profiteering during famine and shortages in World Wars.

But these accusations are vindicated as :-

* ANTI-SOCIALIST : But they did reject the Public safety bill, which was anti-socialist and communist.
* ANTI-STRUGGLE : They weren't against struggle, but wanted to use the threat of re-launch.
* ONLY LEGAL MEANS : This didn't mean that they didn't believe in all out struggle as they had grown

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on their own and not dependent on British largesse.

⇒ Even in the Bombay plan (1944), they argued for partial nationalization and equitable distribution. Hence, they contributed in their own capacity and means.

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14. What were the arguments advanced by Swarajists for entry into councils and why was this move being opposed by others within the Congress? In this context, highlight the successes and limitations of the Swaraj Party on their entry in councils. **(250 Words) 15 Marks**

परिषदों में प्रवेश के लिए स्वराजियों द्वारा दिए गए तर्क क्या थे और कांग्रेस के भीतर अन्य लोगों द्वारा इस कदम का विरोध क्यों किया जा रहा था? इस संदर्भ में, परिषदों में प्रवेश के संबंध में स्वराज पार्टी की सफलताओं और सीमाओं पर प्रकाश डालिए।

Post withdrawal of the Non cooperation movement, there was a division in the political ranks on mode of struggle.

They were divided into the Swarajists (Das & Nehru) and No changers (Patel & Rajendra Prasad).

Swarajists wanted to enter councils :-

- They wanted to destroy councils from within. ('End or mend'
- It would provide political training for post independence.
- British's weaknesses could be exposed.
- Councils could be areas of struggle.
- It would lead to public enthusiasm.
- Finally, it would utilize time - till the momentum is built up again.

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Some opposed this as:-

- It could lead to political corruption and lust for power.
- It would lead to alienation from masses.
- Council entry could create Rivalries.
- It was important to prepare masses via constructive work.

Swarajists finally fought 1923 CLA elections.

They succeeded in:-

- Mudimann committee was appointed to look into Montford reforms.
- They outvoted government many times
- Swarajists won 42 seats.
- VJ Patel was first elected Speaker.
- They defeated Public Safety bill (1928).
- Several walkouts were staged.

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However, some limitations remained :-

- Limitations of 'obstructionist' policies
- Difficulties of coalition politics
- Division into Responsivists (Kelkar; Madan Mohan Maliviya; Lala Lajpat Rai) who wanted Pro Hindu reforms.
- This led to rising communalism.
- They didn't support tenants' cause, and were pro landlord.
- Few indulged into political corruption.

⇒ with Das's death (1925), they suffered a blow however a Surat split like situation was avoided, and made use of the time till Simon commission arrived (1928).

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15. What were the expectations behind the introduction of permanent settlement by the British in Bengal? Why did the Zamindars default on payments under this system initially? Also provide reasons for the system not being extended much beyond Bengal. **(250 words) 15 Marks**

बंगाल में अंग्रेजों द्वारा स्थायी बंदोबस्त की शुरुआत करने के पीछे निहित अपेक्षाएं क्या थीं? आरंभ में इस प्रणाली के अंतर्गत ज़मींदार भुगतान करने में विफल क्यों रहे? साथ ही, इस प्रणाली को बंगाल से बहुत दूर विस्तारित नहीं करने के कारणों को भी बताइए।

Cornwallis (1793) introduced the Permanent settlement system in Bengal, Bihar and Orissa, on the lines of England's land revenue system.

Expectations were :-

> Creation of loyal allies in the form of Zamindars.

> Since rent was fixed, Zamindars would invest into agricultural productivity.

> Win-win situation :-

- British - Assured revenue
- Zamindar - Hereditary rights
- Peasant - fixed revenue, Patta provided

> Also, Zamindars knew local customs.

However, there were defaults initially as :-

- Rent fixed was very high.

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- Uniform rent for all lands, irrespective of fertility.
- No proper land survey was done.
- Loopholes around auction process - Due to Sunset law, when land was auctioned, zamindar placed his men for bidding, so land came back to him.
- Zamindars led luxurious lives, and hence defaulted.

It wasn't extended much beyond Bengal as:-

- There wasn't a system of Zamindars in South, hence ryotwari system was introduced by Munro.
- In North also, direct revenue from village headman / Muqaddam was taken (Mahalwari).
- The productivity and prices increased, but rent was fixed.
- There was default by zamindars.
- Peasants were abused by zamindars due to sunset law.

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- Auctioning of land failed due to bidding by same defaulter zamindar.

⇒ But irrespective of revenue system, British exploitation led to food insecurity, shift to cash crops, indebtedness and bonded labour.

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16. Over the years, the nationalist movement successfully created an ideology and culture of democracy and civil liberties that became a source of its strength. Discuss. **(250 Words) 15 Marks**

समय के साथ, राष्ट्रवादी आंदोलन ने लोकतंत्र और नागरिक स्वतंत्रताओं की विचारधारा और संस्कृति का सफलतापूर्वक सृजन किया जो इसकी शक्ति का स्रोत बनीं। चर्चा कीजिए।

The nationalist movement was strengthed by many external and internal factors to create a culture of liberty, equality, fraternity and democracy.

It began with pre-nationalistic tendencies (love for own land/region/'nadu') to call for 'Purna Swaraj' (1929).

- External factors which aided were :-
  - Role of Western educated intellectuals
  - Experience of Indian soldiers abroad showed them the unfairness of British rule.
  - International events like defeat of Italy by Ethiopia, and the rise of Japan inspired Indians.
  - Organisations abroad were secular and democratic like Ghadr party (1913).

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- Press and literature :-
  - Government policies were criticized and exploitation was exposed.
  - Modern ideas of civil rights and democracy was spread.

- INC resolutions and activities :-
  - The Nehru report (1928) aimed at providing a bill of rights, no state religion, equal rights of men and women, and universal franchise.
  - Karachi session (1931) gave fundamental rights and economic resolution.
  - Agriculture and rural areas were given impetus in the election manifesto (1937), post Faizpur conference (1936).

- Constructive work :-
  - Hindu-Muslim unity was aimed at.
  - Upliftment of Harijans and reservation in general electorates to provide positive affirmative action.

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- Political activity :-
  - INC in legislatures aimed at restoring civil liberties, such as by allowing trade unions, lifting off curbs on press, release of political prisoners etc.
  - Movement against undemocratic acts such as Rowlatt act (1919), Indian Press act (1910), etc.

⇒ Even after 7 decades of independence, Indian democracy has largely been successful because of such solid foundation in freedom struggle. The ideals of the nationalist movement have been enshrined in the Constitution.

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17. Even though the leading Indian Nationalists had long been sensible of the power of the mother tongue to rouse and move, linguistic reorganisation of states after independence took some time to become a reality. Explain.
(250 words) 15 Marks

भले ही अग्रणी भारतीय राष्ट्रवादी लंबे समय से जागृत होने और आगे बढ़ने में मातृभाषा की शक्ति से अवगत रहे थे, लेकिन स्वतंत्रता के पश्चात् राज्यों के भाषाई पुनर्गठन को वास्तविकता में परिणत होने में कुछ समय लगा। व्याख्या कीजिए।

Mother tongue is the most valuable asset to express oneself and provides an identity. With the draft National Education policy by Kasturiranjan committee out, it brings back the focus on language.

But it has a long history. Nationalists were aware of its importance as:-

- Risley Papers (1905): The British wanted to divide Bengali nationalism by partition of Bengal (1905).
- Nagpur session (1920): To increase reach amongst masses, Provincial Congress committees were formed with linguistic basis.
- Madras (1937): When Madras under C. Rajagopalachari made Hindi compulsory, agitations were led by Periyar.

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- Constituent assembly: Debates were held over official and national language, use of Hindi and its dialect, and Munshi-Ayyangar formula of compromise.

Further, nationalists had used local/vernacular writings to arouse masses during freedom struggle as well.

But post independence, linguistic organization took time because:-

→ Jawaharlal Nehru was wary of further balkanization on linguistic basis.

→ With 565 princely states to be integrated, linguistic reorganization was delayed.

→ Post partition, to maintain unity and integrity, multi linguistic states were aimed at.

→ English was made the link language and also official one for 15 years.

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→ Dhar committee and JVP committee also rejected linguistic basis of division.

It was only after hunger strike by P. Sreeramalu, riots in Bombay and agitations in Southern India, were the 14 states and 6 UTs created via States Reorganization Act 1956.

1965 agitation led to continuation of bilingualism officially as well.

⇒ Unlike language as a divisive factor ~~(to~~ in Sri Lanka (Sinhalese v/s Tamil) or Pakistan post partition (Urdu v/s Bangla), language chauvinism hasn't trumped nationalism in India, inspite of all these conflicts.

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18. The integration of tribals was a crucial issue facing independent India. Highlight the main arguments in the debates on this issue that helped shape the government policy. (250 words) 15 Marks

आदिवासियों का समेकन स्वतंत्र भारत के समक्ष उपस्थित एक अति महत्वपूर्ण मुद्दा था। इस मुद्दे पर विमर्श के उन मुख्य तर्कों पर प्रकाश डालिए जिन्होंने सरकारी नीति को आकार देने में सहायता की।

One of the crucial challenges in post independence consolidation was that of tribal integration. They faced various issues like marginalization, indebtedness, poor socioeconomic indicators and labelled as criminal tribes.

→ Broadly, there were 2 schools of thought for shaping policy:-

~~Integrationist~~ Isolationist approach | Assimilationist approach

→ Main arguments were:-

- ~~Integrationist~~ Isolationist:-
  - To maintain the tribal culture as much (status quast)
  - No interference in tribal way of life
  - Tribals living according to their own knowledge without over-administration

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- Assimilationist:-
  - Use of resources of modern knowledge to improve tribal standard of living.
  - Disapproval of tribal way of life.

Both approaches were rejected. Nehru propounded an integrationist approach and gave the tribal panchsheel:-

1) No over administration
2) Improving HR capability for self administration
3) Outcome wert quality
4) No imposition of alien values
5) Respect rights on forests.

- Assimilationist way was rejected as it would have lead to loss of identity and interference of outsiders.
- Isolationism was rejected as they could not be cut off from development.

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Integrationist approach
(Government Policy)

① Preventive Measures
- Schedule V and VI (eg - prevent land alienation)
- Restrictions (Art 19(2)) wrt freedom of movement in tribal areas
- Inner line permit
- Restricted area, and protected area permits

② Promotive
- Article 46 (DPSP)
- Special responsibility of Governor
- Commission for SC and ST
- Tribal Advisory Council
- SCS (Gadgil formula)

⇒ In addition to these, it is the most important fundamental duty to conserve composite culture and common brotherhood (Article 51A).

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19. Comparing the process of decolonisation in Africa and Asia, explain why did it take longer for African countries to gain independence.

(250 words) 15 Marks

अफ्रीका और एशिया में विउपनिवेशीकरण की प्रक्रिया की तुलना करते हुए, व्याख्या कीजिए कि स्वतंत्रता प्राप्त करने में अफ्रीकी देशों को अधिक समय क्यों लगा।

Post the second world war, there was a wave of decolonization in Asia and Africa.

There were underlying similarities, such as :-

- Role of Western educated leaders
  - Asia: Sukarno (Indonesia)
  - Africa: Dr Nkrumah (Ghana); Nkrumah (Ghana)
- Militant nationalism
  - Asia: INA (India) and underground movement in Quit India movement
  - Africa: Mau Mau Secret society (Kenya)
- Exposure of soldiers
  - They were exposed to unfairness and left alone to fend for themselves.
  - They won many battles, which created self confidence.
- Blow to colonialists
  - They were socioeconomically savaged

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with high casualties.

- Global opinion
  - Public opinion was against imperialism.
  - Pressure by UN, USSR and USA.
- Support to each other
  - Asian Relations Conference 1947
  - Bandung Conference
  - Nkrumah - Father of Pan Africanism.

However, there were differences as well:-

AFRICA	ASIA
→ Political struggle absent/nascent.	→ Generally long political struggle.
→ Neocolonialism, eg - De Gaulle created French protectorates.	→ Transition to stable polities.
→ Poor socioeconomic indicators	→ Better than Africa
→ Infrastructure destroyed, eg: Portuguese in Mozambique	→ Colonial infra utilized (eg- Railways in India)

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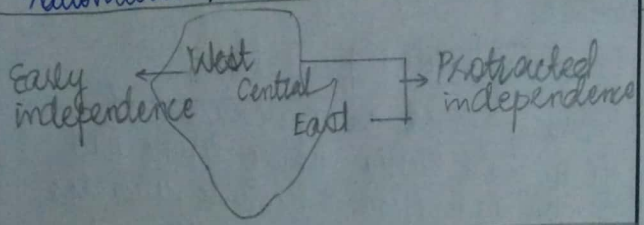
Africa took a longer time because :-

- East and Central part had substantial number of whites, so colonialists had number and resources to crush nationalism.



- Opposition of whites : eg : Rhodesia → declared independence without British consent.
- Poor demographic indicators : Hence, easier to oppress. Political leadership was also less.
- Divide and rule policy : They utilized tribal rivalries.
- Poor local warfare techniques.
- Inferiority complex

⇒ But over time with a spirit of Pan Africanism, Africa was also decolonized.

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20. Discuss whether the Second World War was a conflict of ideologies or an inevitable international conflict resulting from pursuit of imperial interests. **(250 words) 15 Marks**

चर्चा कीजिए कि क्या द्वितीय विश्व युद्ध विचारधाराओं का एक संघर्ष था या साम्राज्यवादी हितों के अनुसरण के परिणामस्वरूप एक अपरिहार्य अंतर्राष्ट्रीय संघर्ष था।

The Second world war was mired in a web of imperialistic interests, miscalculations and ideological conflict.

- Conflict of ideologies
  - Germany feared an aggressive and communist Russia, hence broke pact of non aggression - historic blunder.
  - Policy of appeasement was followed (US, UK, France) wrt fascist powers as they believed it would act as a buffer to communist Russia.
  - Distrust between US and allied powers.
  - Fascist ideology of Hitler and Mussolini - glorification of war and hypernationalism.

Elsewhere, public opinion was against war. USA even followed an isolationist policy.

- Imperial interests
  - Change in balance of power with

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resurgent powers in Europe wanting more territories.
- Power at home was linked with capturing more territories.
- Quest for lebensraum ("living space") for increasing population
- Post Great depression, economic concerns had become important.

- Inevitability of international conflict was there because :-
- German miscalculation : It launched a 2 front war with aerial bombing on West and Russian Army on the East.
- Entry of US : Pearl Harbour bombing by Japan was a great blunder.

Finally, along with both, ideological conflict and imperial necessities, the failure of League of Nations to keep a check added fuel. It had no force of sanctions and solved only minor disputes like

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that was Mosul by Britain and Turkey.

→ Culmination of all these factors together caused the war and defeat of Axis powers. Also, it is a subset of these factors only which continue well beyond 1945 into the neo-cold war.

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GENERAL STUDIES (TEST CODE : 1431)

Name of Candidate	DARPAN AHLUWALIA		
Medium Eng./Hindi	ENGLISH	Registration Number	214713
Center		Date	1st July '19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
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9	10	
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11	15	
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20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. Giving examples, explain how land topography affects the regional and planetary wind systems. Also, differentiate between the westerlies of the northern and southern hemisphere. **(150 words) 10**

सोदाहरण व्याख्या कीजिए कि धरातलीय स्थलाकृति क्षेत्रीय और ग्रहीय पवन प्रणालियों को किस प्रकार प्रभावित करती है। साथ ही, उत्तरी और दक्षिणी गोलार्ध की पछुवा पवनों के मध्य अंतर स्पष्ट कीजिए।

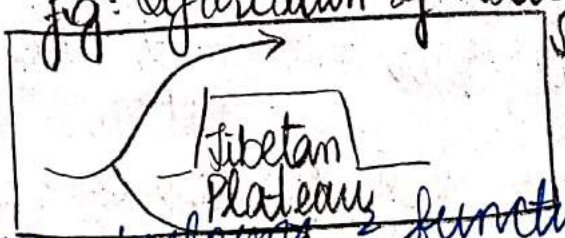
Land topography affects both planetary (westerlies | trade winds | easterlies) and regional (secondary and local) winds in the following ways :-

- Planetary wind

→ Land-water distribution
In southern hemisphere, due to less landmass and open ocean, westerlies are more strong.
They occur between 40-65°S latitude- roaring 40s; furious 50s; shrieking 60s; screaming 70s.

→ Uneven relief
Hence, Northern westerlies are irregular than southern.

fig: Bifurcation of Westerly Jet Stream



- Regional wind

→ Highlands
Eg: Tibetan plateau performs functions :-

Mechanical barrier to Westerly Jet Stream

Easterly Jet Stream due to heating in summers

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→ Katabatic winds

Eg: Foehn (Alps); Chinook (Rockies); Bora (Adriatic sea).

These are warm winds, decreasing temperature on leeward side.

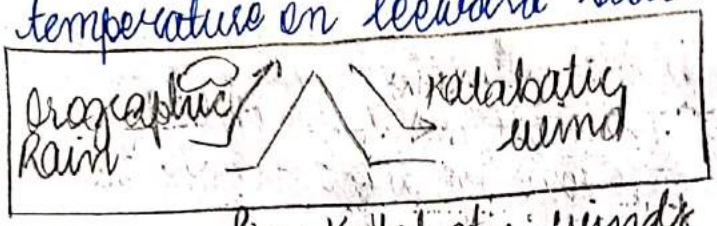

fig: Katabatic winds

→ Land and sea breeze

This is due to liberal nature of land and conservative water. Land gains and loses heat quickly in day and night (respectively).

→ Valley and mountain breeze

In day and night time respectively.

WESTERLIES (30°-60° N/S)

⇒ North	South
• Blow in south-West direction.	• Blow north-west.
• Less strong and more irregular	• More strong due to vast, unhindered ocean.
• Stronger in Winters from Nov-February.	• Stronger from June-August.
• Impact of ozone depletion less.	• Impact of ozone depletion more, hence greater warming and stronger westerlies.

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2. What is palaeomagnetism? Explain how it serves as a bridging evidence for Plate Tectonics Theory. (150 words) 10

पुराचुम्बकत्व क्या है? व्याख्या कीजिए कि यह किस प्रकार प्लेट विवर्तनिकी सिद्धांत के प्रमाण हेतु एक सेतु के रूप में कार्य करता है।

Palaeomagnetism is the study of Earth's magnetic field from rocks and sediments.

→

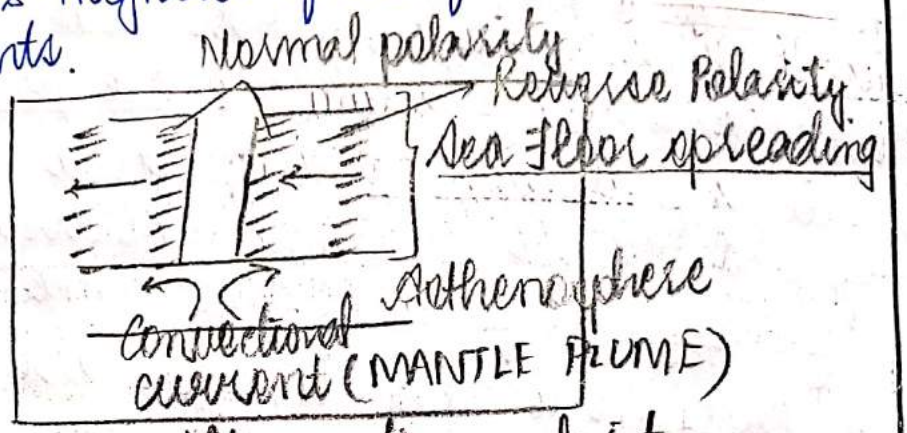

fig: Alternating polarity on either side of Mid-oceanic ridge

- It is seen that rocks on either side of Mid oceanic ridges (like Mid Atlantic ridge; African rift valley), have similar properties (age, constituents), which tells about direction and intensity of past magnetic field.
- There are alternating bands of normal and reverse polarity.

Plate tectonics refers to the lithospheric (crust and upper mantle) plates floating onto asthenosphere.

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Palaeomagnetism acts as an evidence for plate tectonics as:-

- constructive plate margins occur in case of diverging plates.
- Basalt is released on either side of Mid oceanic ridge, from mantle plume.
- Basalt is rich in iron and silica deficient, hence contains impression of geomagnetic field of that time.
- Rocks thus made next to ridge are youngest and have normal polarity.

This gave the evidence of continuous sea floor spreading (Harry Hess). Thus, due to continuous interaction of oceanic lithospheric plates, they are younger than continental ones.

Thus, it served as an evidence for Morgan's theory of plate tectonics.

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3. Mention the conditions responsible for occurrence of Temperature Inversion in atmosphere. Elaborating on its various types, highlight its effects on the biosphere. (150 words) 10

वायुमंडल में तापमान व्युत्क्रमण की घटना हेतु उत्तरदायी परिस्थितियों का उल्लेख कीजिए। इसके विभिन्न प्रकारों का सविस्तार वर्णन करते हुए, इसके द्वारा जैवमंडल पर पड़ने वाले प्रभावों पर प्रकाश डालिए।

Temperature inversion refers to the reversal of normal temperature behaviour in atmosphere (1°C decline with every 166m ascent).

A layer of warm air covers the cold surface layer, preventing further convection currents.

⇒ Conditions needed :-

- Long night : Outgoing radiation will be more than incoming radiation of daytime.
- Calm and stable air : It will prevent any vertical mixing.
- Clear sky : Thus, there'll be unhindered escape of radiation.

⇒ Types of inversion are :-

- Valleys :-

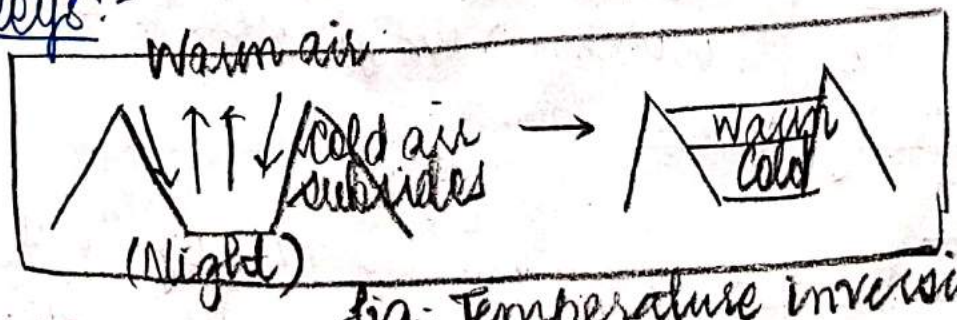

fig: Temperature inversion

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Cold air from slopes subsides into the valley leading to temperature inversion.

- Cold winter night → Surface temperature inversion :-

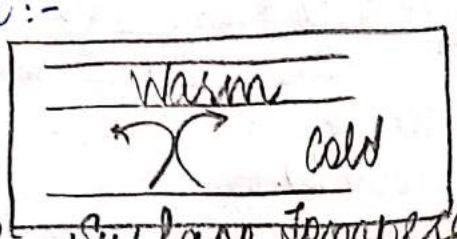

fig: Surface Temperature Inversion

- Frontal inversion : It occurs when a cold air mass uplifts a warmer one.

⇒ Effects on biosphere :-

• CONS :-

- No upward convection, hence there is no rainfall.
- It leads to collection of smog and pollution dome.
- It causes frost.
- Low visibility leads to accidents
- Houses have to be built on slopes only, as those in valleys reach below freezing point.

• PROS :-

- Yemeni coffee is grown in valley as it is protected from direct sunrays. Etc.

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4. Highlight the importance of iron and steel industry as the basic building block of the economy. In this context, discuss the key features of the National Steel Policy, 2017. (150 words) 10

अर्थव्यवस्था के आधारभूत निर्माण खंड के रूप में लौह एवं इस्पात उद्योग के महत्व पर प्रकाश डालिए। इस संदर्भ में, राष्ट्रीय इस्पात नीति, 2017 की प्रमुख विशेषताओं पर चर्चा कीजिए।

Recently, India replaced Japan as the 2nd largest steel producer. Iron and steel is the backbone of the economy.

- Development is proportional to per capita steel consumption. (India : 69 kg ; China : 525 kg)
- It is required for construction goods for sustaining urbanization and industrialization.
- It is vital to defence economy and security equipments.
- Transportation sector is also dependent.
- It contributes to 2% of GDP.
- Many direct and indirect employment opportunities are linked.
- Agricultural mechanization is dependent on iron and steel.
- Vital forex is earned. Eg: TATA steel is 5th largest producer.
- Thus, all - heavy | medium | light industries depend on it.

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To give it impetus, many initiatives, like National Steel Policy 2017 have been undertaken :-

- Aim is self sufficient and globally competitive industry.
- To be a net exporter by 2025.
- It aims at increasing domestic coking coal, and decrease imports, from 85% to 65%.
- MSME sector would be given thrust.
- To decrease use of coking coal, more gas based steel plants and electric furnaces to be constructed.
- Coordination of Centre and states to provide litigation free lands.
- It aims at increasing per capita consumption to 160 kg, from 69 kg by 2030.
- SRTMI (Steel Research Technology Mission): To partner with private sector.
- It aims at 300 mn tn/yr of crude steel production by 2030.

⇒ Since rollout, ₹5000 cr have already been saved. Further thrust should be on technology infusion and economies of scale creation.

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5. Analyse the phenomenon of 'Resource Curse', by giving adequate examples from around the world as well as India. (150 words) 10

विश्व और भारत से यथोचित उदाहरण प्रस्तुत करते हुए 'संसाधन अभिशाप' की परिघटना का विश्लेषण कीजिए।

Resource curse refers to abundance of natural resources, paradoxically leads to poor growth and development.

- concentrated investment occurs in one sector only, leading to crowding out in other sectors. This decreases manufacturing output.
- Due to dependence on single sector, there is fluctuation in revenue and GDP.
- Resources are extracted, and human resources are not paid attention to. This causes poor demographic indicators.
- Due to high exports, appreciation of currency occurs, making other exports uncompetitive.
- It is often associated with political conflicts, armed uprisings, and inequality.

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Abundance of natural resources

- Poor manufacturing sector → Inequality, Armed conflict, Tribal uprisings, Political instability
- Poor human resource → slow socioeconomic development
- Concentrated Investment → less focus on other sectors → Poor employment; GDP and revenue fluctuation

Examples :-

- Venezuela : Dependence on oil and natural gas only ; galloping hyperinflation seen today.
- Africa : Angola → Oil
  DRC → Diamonds
- Dutch Disease : Natural gas export was primary focus, and it led to appreciation, and ultimately unfavourable trade balance and recession.
- India : Natural resource rich pockets are having scourge of Naxalism. There is rampant exploitation, and lack of penetration of schemes and programmes for development.

⇒ Thus, it is also called as 'Paradox of Plenty'.

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6. Growth of natural capital is vital for sustainable economic development in India. In this context, state the concept, strategy and broad policy guidelines for Natural Capital Accounting (NCA) for effective management of natural resources. (150 words) 10

भारत में संधारणीय आर्थिक विकास के लिए प्राकृतिक पूंजी की वृद्धि अपरिहार्य है। इस संदर्भ में, प्राकृतिक संसाधनों के प्रभावी प्रबंधन के लिए प्राकृतिक पूंजी लेखांकन (NCA) की अवधारणा, रणनीति और व्यापक नीतिगत दिशानिर्देशों का वर्णन कीजिए।

According to Inclusive Wealth report (UN-Environment), capital is divided as follows-:

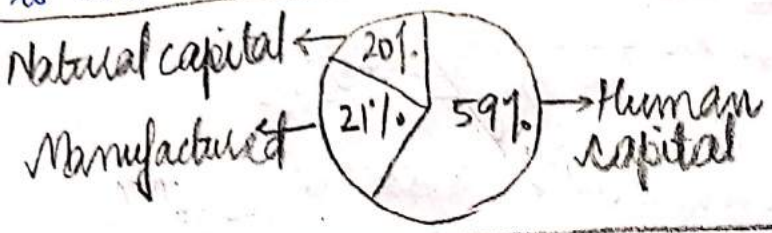

fig: 20% share of natural capital

- Although, natural capital is seeing a decline in growth rate (-0.7%), but it provides the raw material for secondary sector, and directly impacts primary sector production.
- Rampant exploitation will lead to cost to economy and ecology in the form of climate change related effects and resource crunch.

Hence, India has partnered with World Bank in WAVES (Wealth Accounting and Valuation of Ecosystem Services).

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In this context, Natural Capital Accounting is:-

- CONCEPT → It is a tool to factor in positive and negative externalities on natural resources.
  It provides an overall and holistic picture of sustainable development.
  eg: India aims at decreasing emission intensity of GDP by 33-35%.

- STRATEGY → It includes accounting for input of ecosystem services, and damage due to output creation process (Positive and negative cost).
  eg: Amount of water used in fracking for shale gas extraction is a negative externality.

- GUIDELINES → * National Biodiversity action plan aims at valuation of goods and services.
  * Jobs for valuation of ecosystem services under Green Skill Development Program of ENVIS.
  * Capacity building of states by MoPSI's Natural Resource Accounting project.
  * Reduce cost by negative emission technologies (CCS; CCUS; Carbon sinks) etc.

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7. Discuss the reasons behind increased instances of human-wildlife conflict and suggest some mitigation measures to address them. **(150 words) 10**

मानव-वन्यजीव संघर्ष के बढ़ते दृष्टांतों के पीछे उत्तरदायी कारणों पर चर्चा कीजिए और इनसे निपटने के लिए कुछ शमनकारी उपायों का सुझाव दीजिए।

1100 lives have been lost in man-animal conflicts from 2014-19 due to following reasons :-

- Climate change and encroachment of forests has led to lack of water bodies and prey base.
- Disturbance of habitat due to poaching, fuel, food and firewood collection
- Habitat fragmentation and elimination of migration corridors.
- Cultivation of crops like sugarcane on periphery of forests.
- Settlements of people on forest periphery
- Increase in forest fires, droughts etc.

- Outside Forest periphery :-
  - Mostly, there are dog-man conflicts (stray dogs are stray); monkey menace (HP); nilgai (Bihar) etc.
  - Reasons are : Improper waste disposal; lack of sterilization; invasive species eg - Bullfrog in Andamans destroys crops and chicken.

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It can be mitigated by:-

- Kalra committee suggestions like animal and prey database maintenance, and re-established corridors.
- QRT of locals and volunteers should be roped in.
- Capacity building of forest personnel is needed.
- Biofencing should be done. In case of electrical fences, to prevent shock related animal deaths, coordination with electricity deptt.
- Insurance, compensation and rapid relief to public affected.
- Change in crop patterns (avoiding sugarcane | banana).
- Construction of ecobridges and under-bridges.
- Rejuvenation of water holes.
- Use of technology : Remote sensing, hyperspectral imaging, mass SMS alerts
- Novel techniques : Immunology contraception ; 3D printing Rhino horns etc

→ Finally, best practices need to be disseminated, eg - Jharkand's app for tracking elephant movement etc.

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8. Montreal Protocol is often considered as the most successful international environmental treaty. Highlighting the achievements of the protocol, discuss the reasons for its success. (150 words) 10

मांट्रियल प्रोटोकॉल को प्राय: सर्वाधिक सफल अंतर्राष्ट्रीय पर्यावरण संधि के रूप में माना जाता है। इस प्रोटोकॉल की उपलब्धियों पर प्रकाश डालते हुए, इसकी सफलता के कारणों पर चर्चा कीजिए।

Montreal Protocol (1987) has completed 3 decades of successful implementation. Ozone levels are expected to come back to 1980 level by 2045-60.

Its achievements are :-

- It has been universally ratified. No signatory opted out.
- US was the first ones to ratify it and contribute to 'Multilateral' fund set under it.
- CBDR (Common but Differentiated responsibility) was recognized under it.
- 99% of Ozone depleting substances (ODS) has been achieved.
- These ODS elimination has led to reduction of global warming also as many were releasing GHGs as well.
- Multilateral fund has been receiving continuous funds for phase out.
- Recent Kigali Amendment is aimed at eliminating HFCs.

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Reasons for its success are -:

- Partnership of industry :- Companies have constantly innovated to produce non ODS for ACs and refrigerants.
- Establishment of multilateral fund and funding consensus.
- Mandate of trading of ODSs only with signatories, key members.
- CBDR mandated increase in role of developed countries, and greater finance and technology to developing ones.
- Scientists were also involved in negotiations. So, there was enough of ozone depletion proof, unlike today, when many scientists are refuting global warming claims.

⇒ Further, there is a need to replenish Multilateral fund and commitments, to achieve a similar success wrt Kigali amendment.

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9. Identify different factors that trigger Glacial Lake Outburst Floods. Also, suggest certain measures that need to be taken to minimize their impact. (150 words) 10

उन विभिन्न कारकों की पहचान कीजिए जो हिमनदीय झील प्रस्फोट जनित बाढ़ (ग्लेशियल लेक आउटबर्स्ट फ्लड) को प्रेरित करते हैं। साथ ही, इनके प्रभावों को न्यून करने हेतु किए जाने वाले कुछ आवश्यक उपायों का भी सुझाव दीजिए।

Glacial lake outburst floods are a great threat to the Himalayas / 3rd pole of the world.

They're formed by moraine (debris and loose soil) damming the water outflow from glacier. Break in this barrier causes GLOF.

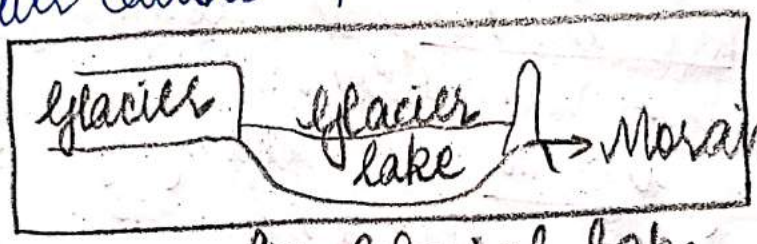

fig: Glacial lake

GLOF is triggered by:-

- Landslides and avalanches break the moraine dam.
- Excessive rainfall leading to flash floods.
- It is triggered by water volume increasing with no outlet and poor seepage.
- Climate change induced melting.
- Natural erosion of moraines over time.
- Earthquake tremors
- Unsustainable tourism may also cause GLOF.

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Measures to decrease impact include :-

- Outlet control : Evacuation of water.
  Eg : South Khonak lake (Sikkim) → Usage of polyethylene pipes.
- Sustainable tourism activities
  Eg : Restricting tourism numbers in vulnerable areas.
- Database : Of historical GLOFs and mapping of current vulnerable ones.
- Community : Resettlement from periphery of large glaciers and valleys.
- Early warning system : Via study of glacial movement, precipitation etc.
- Capacity building
  Eg : Forming regional meterological centre for Himalayas.
- International cooperation
  Eg : Glacial studies as a part of NISAR (NASA - ISRO Synthetic Aperture Radar)

⇒ Finally, broader aspect of mitigating climate change and global warming (which cause decrease in albedo) should be looked into.

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10. Discuss India's vulnerability to chemical disasters. In this context, mention safety initiatives taken to address chemical risk in India. (150 words) 10

रासायनिक आपदाओं के प्रति भारत की सुभेद्यता पर चर्चा कीजिए। इस संदर्भ में, भारत में रासायनिक जोखिम से निपटने हेतु की गई सुरक्षा पहलों का उल्लेख कीजिए।

2019 marks 35 years of Bhopal gas tragedy due to MIC (methyl isocyanate release). The vulnerability to chemical disasters is still high.

- There is use of obsolete technology in industries.
- Lack of personal protection equipment, and no safety audit thereof.
- Poor coordination with hospitals; eg - to stock antidotes of chemicals used.
- Poor capacity building and awareness of District Disaster Management authority.
- Terrorist activities can also lead to sabotage.
- No QRT team of experts and volunteers.
- Maintenance schedules are flouted.
- Improper waste disposal measures.
- Moreover, many factories using hazardous chemicals are in unorganized sector.
- Human and technical errors can also occur.

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Various safety initiatives w.r.t. chemical disasters are :-

- Legislations
Petroleum act 1934; Explosives Act 1884; EPA 1986; Public liability insurance act 1991 etc.
- Hazardous waste management rules on collection, disposal and its treatment.
- Revamp of chief Inspectorate of Factories and single window inspection and safety certificates.
- National Action Plan on chemical disasters has been prepared by NDMA
eg :→ Strengthening police and fire services
→ Inclusion of local volunteers and NCC, NSS, Nehru Yuva Sangathan and NGOs.
→ Temporary relief camps with essential items in vulnerable areas.
→ STF from affected families.
→ capacity building of community viz safety audit, mock drills, training volunteers etc.

⇒ Improved governance and regulatory oversight with community participation is the key.

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11. Differentiate between eustatic and isostatic type of sea-level changes. Also, discuss the resultant landforms which are likely to be formed as a result of sea-level fluctuations. (250 words) 15

सुस्थितिक और समस्थितिक प्रकार के सागर तल परिवर्तनों के मध्य अंतर स्पष्ट कीजिए। साथ ही, सागर-तल के उतार-चढ़ाव के परिणामस्वरूप निर्मित होने वाली संभावित परिणामी भू-आकृतियों की भी चर्चा कीजिए।

According to 5th Assessment report of IPCC, sea level will rise by upto 1m by 2100.

These changes in sea level may be isostatic or eustatic.

EUSTATIC	ISOSTATIC
• It is a global phenomena.	• It occurs locally.
• Cause: Change in shape or volume of ocean basin.	• Cause: Change in local land level.
• Effect: Increase in volume of basin leads to decline in sea level (eg - tectonic changes)	• Effect: Rise in land level causes decline in sea level (and vice-versa).
• Ice age: Glacier formation decreased sea level.	• Ice age: Glaciers compressed land, lowering it, hence sea level rise.

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Various landforms created are :-

- Dependent upon type of 'rejuvenation' :-

River Rejuvenation

Positive

↓

Due to rise in sea level or fall in land level

↓

Loss of erosive power

* Knick point

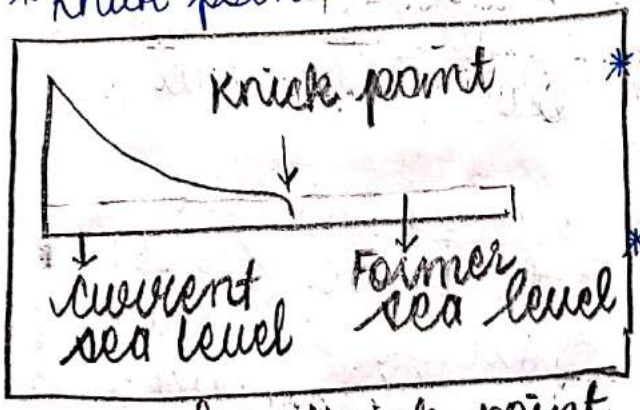

fig: Knick point

Negative

↓

Decline in sea level

↓

Gain in erosive power

* Entrenched meanders
* Deepening of gorges and canyons
* Rapids

- **Emergent** landforms :-

* Wave cut platforms

These are seen along coastlines due to corrosion, hydraulic action and abrasion.

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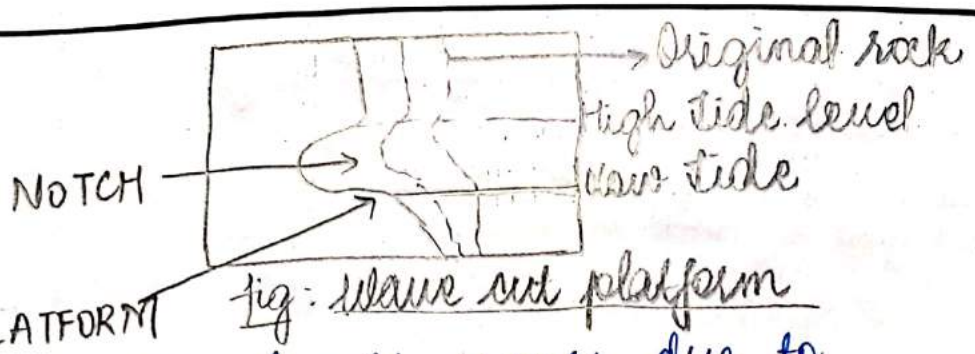

fig: Wave cut platform

* Raised beach It occurs due to decline in sea level, or raising of land.
* Wave cut arches, stacks and stumps

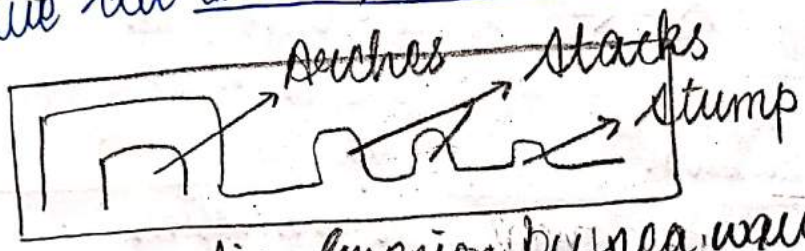

fig: Erosion by sea waves

- Submergent landforms :-
* Fjords U-shaped glacial troughs

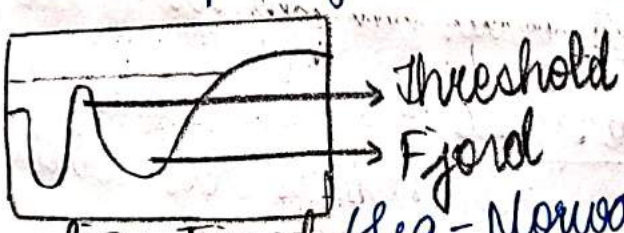

fig: Fjord (Eg - Norway)

* Ria coastline Due to submerged former river valley
* Dalmation coastline It is longitudional to ridge on coast.

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12. Explain the reasons behind earthquakes in Himalayas being more intense and frequent than the ones occurring in Alps region. Why are scientists predicting a largescale earthquake in northern India? Also, elaborate upon some prominent earthquake forecasting techniques. **(250 words) 15**

आल्प्स क्षेत्र में आने वाले भूकंपों की तुलना में हिमालय में आने वाले भूकंपों के अधिक तीव्र होने और बारंबार आने के पीछे उत्तरदायी कारणों की व्याख्या कीजिए। वैज्ञानिक उत्तर भारत में उच्च तीव्रता वाले भूकंप के आने की भविष्यवाणी क्यों कर रहे हैं? साथ ही, भूकंप पूर्वानुमान संबंधी कुछ प्रमुख तकनीकों का विस्तार वर्णन कीजिए।

Himalayas are young fold mountains, formed by continental-continental convergence.

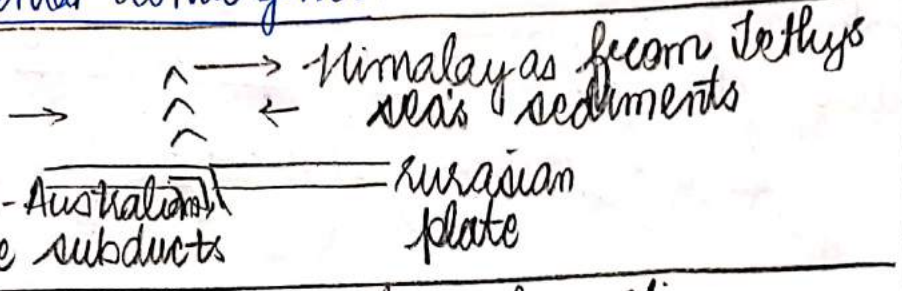

fig: Himalayas formation

Although, both Himalayas and Alps were formed during Alpine orogeny phase, but more frequent and intense quakes occur in former :-

- Faster convergence :-
  Himalayas are still adjusting with semi yr movement, faster than Alps.
- Intensity :-
  Population density in Himalayas is higher, hence destruction due to tremors is more.

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- Higher :- Himalayas are highest range, hence greater pressure on tectonic plates.

- Dams :- Number of dams is more than on alps → Reservoir induced seismicity.

- Glaciers :- Himalayas have 3rd largest glacial mass after 2 poles, hence plates readjust due to glacier and water load. Decompression also occurs due to melting, causing plate movement.

⇒ Scientists are predicting a largescale earthquake post Nepal earthquake (2015) because :-

- Stress accumulated over the years will be released.
- Numerous foreshocks have been received, indicating a larger one.
- No large scale earthquake (more than 8 Richter) has occured which correlates with 5cm/yr movement of Himalayas.

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⇒ Prominent forecasting methods are:-

- Sensors detecting P-S wave lag:- (developed by IIT-Roorkee)

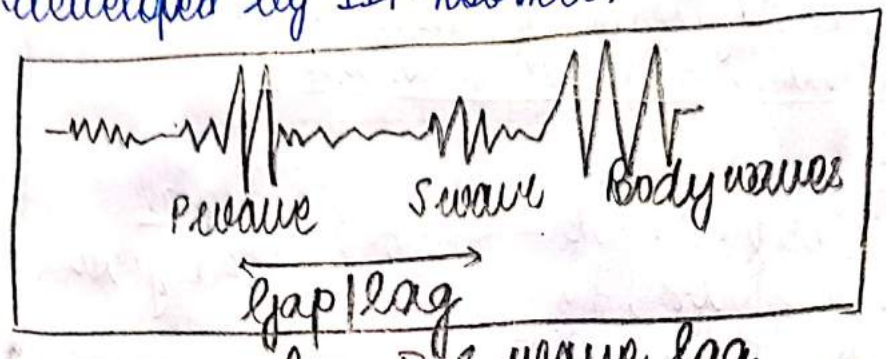

fig: P-S wave lag

It provides lead of 10 sec.-1 minute, as P waves travel at 6 km/sec and S-waves at 3 km/sec.

- Others:-
  - Increase in radon gas concentration in water.
  - Unusual behaviour of animals.
  - Foreshocks also forecast earthquake.
  - Tsunami associated with earthquake: Receding of water level; abnormal faunal behaviour eg- beaching of whales etc.

⇒ So, need of the hour is indigenous forecasting sensors, like the one installed in Pithoragarh (Italian firm Space Dynamics) and community based disaster management.

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13. Explain the role of river as a geomorphic agent with suitable examples of landforms formed during its course of flow. **(250 words) 15**

नदी प्रवाह के दौरान निर्मित होने वाले भू-आकृतियों के उपयुक्त उदाहरणों सहित भू-आकृतिक कारक के रूप में नदी की भूमिका की व्याख्या कीजिए।

Rivers are exogenous geomorphic agents. The landforms may be depositional or erosional depending upon stage of course.

MECHANISM

River

Erosion
- Corrasion - [Lateral / Vertical
- Hydraulic action
- Corrosion | Solvent
- Attrition

Deposition
- From high to low slope gradient
- Decrease in speed
- Carrying capacity exceeded

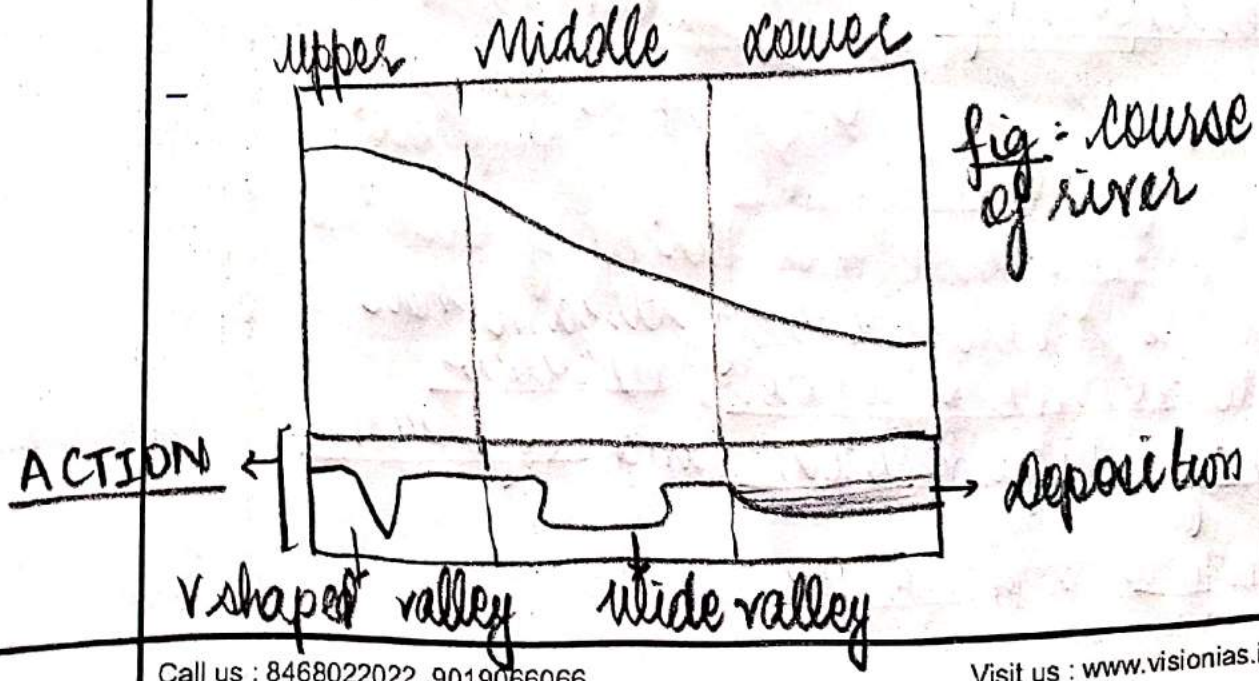

fig: course of river

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→ Upper course (young stage) :-

- Cataracts and rapids

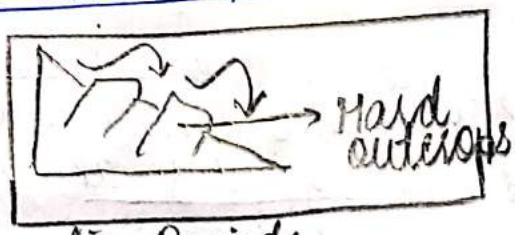

fig: Rapids

It is due to jutting out of hard rocks, which alters river flow.

- Waterfalls and plungepools

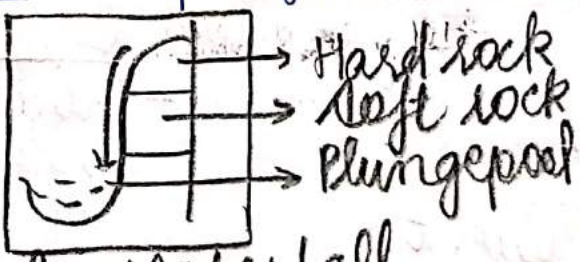

fig: Waterfall

It occurs due to sudden fall in height. Eg: Gersoppa / Jog falls (R. Sharavathi)

- River capturing

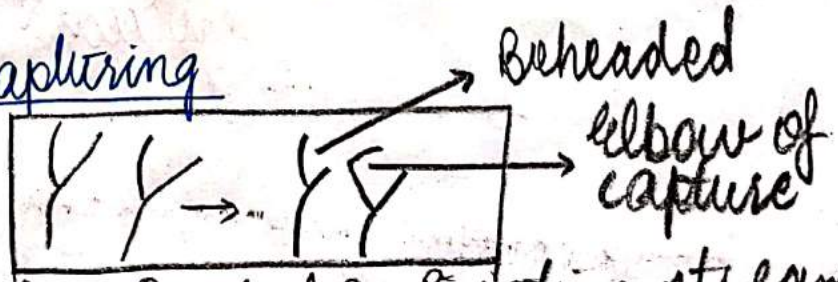

fig: Pirated & Pirating stream

It occurs when pirating stream has great volume of water, narrow valley, high velocity and soft rocks.

- Canyons and gorges

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→ Middle course :-
- Interlocking spurs
- River cliffs
- Meanders Bends in River course due to erosion and deposition, on outer and inner edge (respectively).

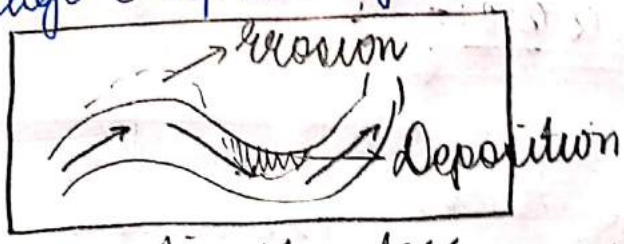

fig: Meanders

→ Lower course :-
- Flood plains : In river course
- Deltas : At river mouth
- Braided stream : Multiple channels due to deposits.
- Levees : Natural embankments formed on sides of river.
- Oxbow lake : Cut out lake / bayous

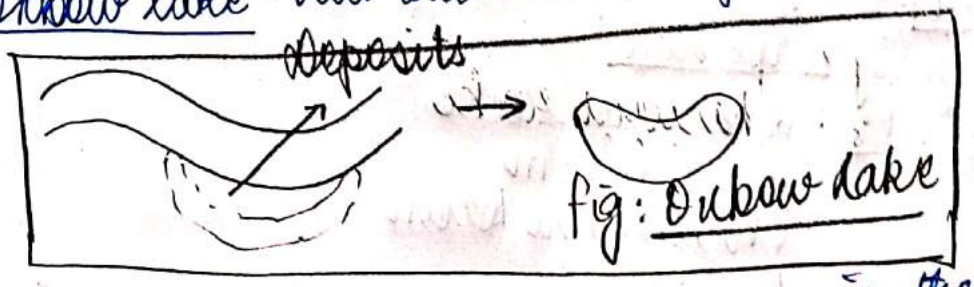

fig: Oxbow lake

⇒ Thus, running water is the most important denudational agent.

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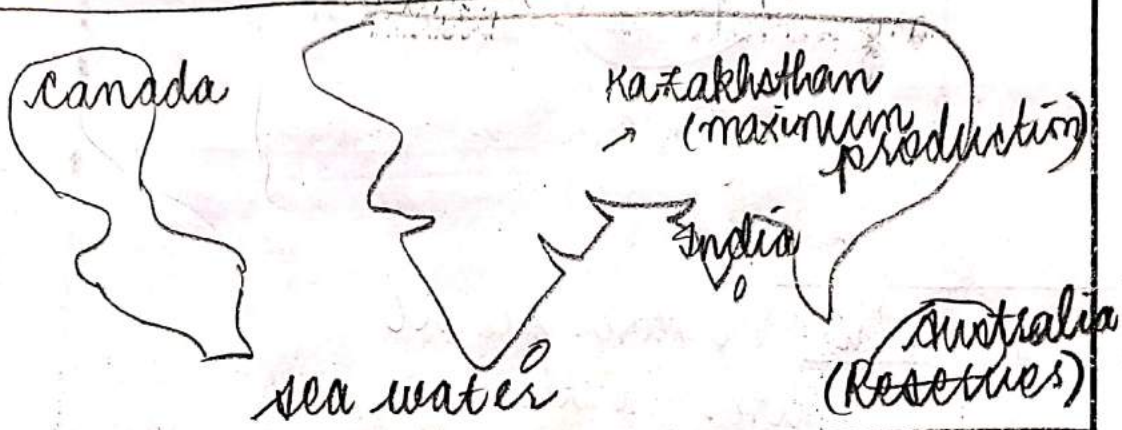
14. Identify the major Uranium reserves in the world and the countries from where India sources it. What measures are required to ensure supply security of fuel for nuclear plants in the country? **(250 words) 15**

विश्व के प्रमुख यूरेनियम भंडारों और उन देशों की पहचान कीजिए जहाँ से भारत इसका आयात करता है। देश में परमाणु संयंत्रों के लिए ईंधन आपूर्ति की सुरक्षा सुनिश्चित करने के लिए किन उपायों की आवश्यकता है?

Uranium is a radioactive element, found as 1-4 ppm in crust. Its major reserves are:-



- Canada: Athabasca basin
- Kazakhstan: Chu sarysu basin
- Australia: Ranger mine
  Olympic dam

India:-
→ Majorly imported
→ Sources: Dharwar rocks
Singhbhum
Meghalaya Basin
Rajasthan
HP
Coastal areas

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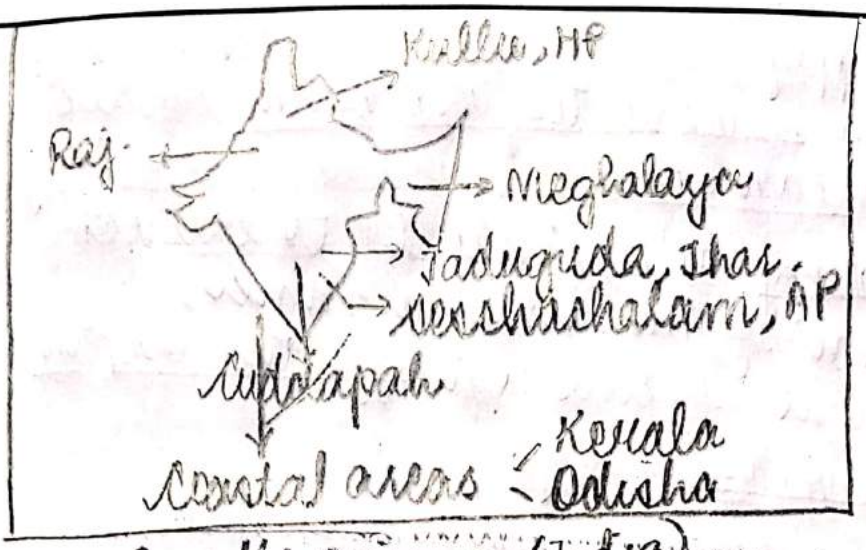

fig: Uranium (India)

⇒ India sources Uranium from :-
- Kazakhstan (maximum)
- Russia
- France

(Talks with Canada and Australia)

⇒ Measures to ensure nuclear fuel security for 22 reactors :-
- Strategic Uranium reserve construction like petroleum ones.
- Increase cooperation with Kazakhstan and diversify trade with it.
- Balancing act with Iran and safeguard investments as it is access to Central Asia.
- Secure sea lines of trade to ensure

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fuel supply.
- Tap into underwater uranium under 'Deep Ocean Mission'.
- Technology development : to extract uranium from Indian mines, which is located at greater depth in economic way.
- Diversify relations with uranium reserve countries.
- Bilateral negotiations and focussed diplomacy with NPT countries.
- Portrayal as a responsible power, in line with IAEA safeguards, and non-proliferatory.

⇒ These measures can assure clean, cheap and 24x7 supply (as base load) of nuclear energy.

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15. What is seabed mining and why is it important for India? Highlight the environmental challenges associated with seabed mining and discuss how these can be addressed. (250 words) 15

सीबेड माइनिंग क्या है और यह भारत के लिए क्यों महत्वपूर्ण है? सीबेड माइनिंग से जुड़ी पर्यावरणीय चुनौतियों पर प्रकाश डालिए और चर्चा कीजिए कि इनसे कैसे निपटा जा सकता है।

Seabed mining refers to extraction of minerals, mainly PMN (polymetallic nodules) from seabed.

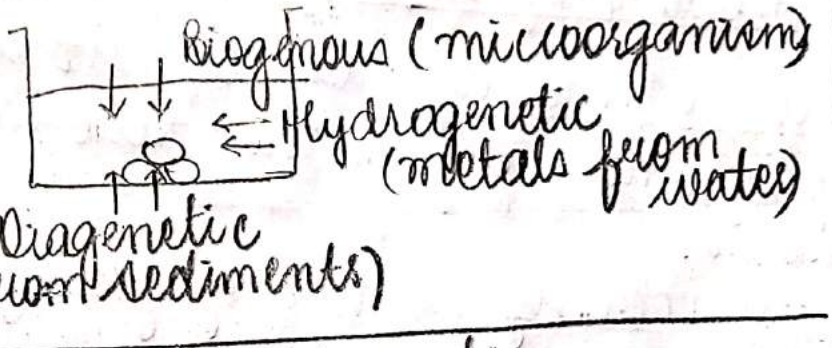

fig: PMN formation

It is significant because:-

- Rights to mine over 75000km² of CIOB (under ISA) will give thrust to 'Deep Ocean Mission' and blue economy.
- Geostrategic advantage of presence in the Indian ocean.
- Economic: Need of copper, manganese, cobalt, iron and rare earth elements (electronics).
- Trade and diplomacy: Export of Rare earths to Japan, South Korea etc.

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- Environmental studies : via underwater robots and drones of GSI.
- Capacity building of Geological survey of India : Samudra Ratnakar ship for exploration.
- Exports : Forex earnings and improvement in current account.
- Coastal community : Development via employment ; Sagarmala ; Blue economy mission.
- Energy security : Mining of gas hydrates / methane clathrates
- Entrepreneurship and employment opportunities.

⇒ But, there are many environmental challenges like :-

- Disruption of marine ecosystem with equipments.
- Release of sediments will lead to water pollution.
- Machines will create noise and light pollution.
- Benthic organisms may be killed / destruction of habitat.

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- Water may get contaminated due to chemicals used.
- Over exploitation can occur, without allowing it to replenish.
- Carbon sinks disruption will lead to release of GHGs.

⇒ To address these :-

- ISA (Intl. Seabed authority) can use taxes and proceeds for investing into marine ecosystem.
- Judicious excavation with minimal disruption techniques need to be formed.
- Mapping of sea bed for resources, where there can be minimum impact on biodiversity.
- Low noise and light pollution extraction methologies.
- Restoration of mined areas is impertinent.
- New technology (like 3D printing of reefs) can be used to restore diversity.

⇒ Ultimately, as the sea bed becomes a new resource frontier, economical development needs to be aligned with SDG 14.

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16. What is Conservation Agriculture? Highlight the prospects and challenges of adopting Conservation Agriculture in India. Also, mention some important policy considerations for its promotion. (250 words) 15

संरक्षण कृषि क्या है? भारत में संरक्षण कृषि को अपनाने की संभावनाओं और चुनौतियों पर प्रकाश डालिए। साथ ही, इसके प्रोत्साहन के लिए कुछ महत्वपूर्ण नीतिगत उपायों का भी उल्लेख कीजिए।

Conservation agriculture is an ecologically and environmentally sustainable way of agriculture. It includes various measures such as use of mulching, no till, sustainable crop choice, crop rotation, agroforestry, organic manure, minimal soil disturbance etc.

⇒ Prospects of adoption:-

- It will enhance food security as demand for food will increase by 30% (by '30).
- It will increase productivity incrementally.
- Climate smart agriculture
- Water use efficiency will save water.
- Less cost and more remunerative
- Soil health will be maintained.
- It will prevent soil erosion and runoff.
- Overall it'll be in line with Doubling Farmer Income-2022 and

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NMSA (National mission on sustainable agriculture).

⇒ Challenges are :-

- Poor awareness amongst farmers, and paucity of extension services.
- Traditional practices like wheat-rice cycle in North India.
- Myths like tilling soil will improve productivity.
- stubble burning resorted to, instead of mulching or using 'Happy Seeder'.
- Monocropping is usually practiced.
- Productivity may be low initially, but it improves incrementally.
- Subsidies on power, water etc. makes efforts nullified.
- Biased MSP policies hinder diversification.

→ Policies for promotion :-

- Saturation of soil health cards in all farms.
- Reward Gram Panchayats for creating model farms.

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- 'Lead farmer' approach to encourage other farmers.
- MSP expansion and prioritization of drought and heat resistant crops.
- Farmers participation in on field research and technology demonstration.
- Machine banks for hiring machines (eg - Happy Seeder, laser leveller etc.)

These can help to sustain the shift from conventional to conservation agriculture, in addition to adoption of organic agriculture and Zero Budget Natural Farming (ZBNF).

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17. Analyse how far the 'Katowice Climate Package' goes in achieving the objectives of the Paris Climate agreement amid the concerns of developing countries like India. (250 words) 15

विश्लेषण कीजिए कि भारत जैसे विकासशील देशों की चिंताओं के संबंध में पेरिस जलवायु समझौते के उद्देश्यों को प्राप्त करने में 'कैटोवाइस जलवायु पैकेज' कितना कारगर सिद्ध हुआ है।

The COP24 of UNFCCC at Katowice has yielded a mixed bag, w.r.t. objectives of Paris agreement of :-

- Keeping global temperature to below 2°C threshold above pre industrial level
- Increase adaptation ability and resilience
- Consistent finance flow.

The concerns of India at Katowice were :-

- Securing finances and transfer of technology for developing countries.
- CBDR-RC : Common but Differential Responsibilities - Respective capabilities
- Different starting points for developed and developing nations.

⇒ In this context, achievements of COP 24 were :-

- Rulebook : Rules for Paris agreement

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were formulated successfully.

- Public registry: INDCs of nations will be available online for transparency.
- Finances: securing of $100Bn/yr and new financial targets from 2025.

⇒ However, it lagged behind on :-

- Omission of 'equity': USA got reference to equity removed from rulebook.
- Double counting: No consensus on weeding out inflated numbers.
- MRV: No consensus on Monitoring, Reporting and Verification methodology.
- SR 1.5 report: It was rejected by nations like USA, Russia, Saudi Arabia etc.
- Finances: No scale up under Article 9.
- Task force on losses and damage: There was no advancement.
- The motion of whether members were doing enough was not allowed.

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Hence, these concerns, especially on finance and technology still persist, which need to be solved at COP 25 (Santiago, Chile) to achieve objectives of Paris climate agreement.

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18. Examine the factors responsible for causing soil pollution in India. Discussing its impact on various ecosystem services, suggest some remedial measures to restore polluted soil. (250 words) 15

भारत में मृदा प्रदूषण के लिए उत्तरदायी कारकों का परीक्षण कीजिए। विभिन्न पारिस्थितिकी तंत्र सेवाओं पर इसके प्रभाव की विवेचना करते हुए, प्रदूषित मृदा का जीर्णोद्धार करने के लिए कुछ उपचारात्मक उपायों का सुझाव दीजिए।

According to ISRO data, 30% land of India is degraded and polluted, impacting both, ecology and economy.

→ Factors behind soil pollution are -:

- Unsustainable agriculture : Excessive chemical usage; mineral imbalance; intensive farming; stubble burning.
- Waste : e waste | biomedical waste | hazardous waste etc. leaches into the soil.
- Oil spills and other hazardous chemicals (untreated effluents)
- Natural causes
  - Volcanoes
  - Forest fires
  - Seepage from sewage system
  - Meteorites
  - Natural accumulation in soil

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→ Impact on ecosystem services is -:

- Food insecurity : It occurs due to poor agrarian productivity, and toxicity in food, due to chemicals.
- Diseases : There occurs bioaccumulation and biomagnification.
- Water contamination : Runoff from soil, and seepage into ground water. According to CWC, 42 rivers of India have more than 2 toxic compounds.
- Degrade biodiversity of soil
- Destroy marine ecosystem : Runoff from soil may destroy flora and fauna in rivers; eutrophication; acidification etc.
- Corrode infrastructure : toxic elements destroy pipes and foundations.
- Air contamination : eg: Dioxins and furans released from plastic waste in soil.

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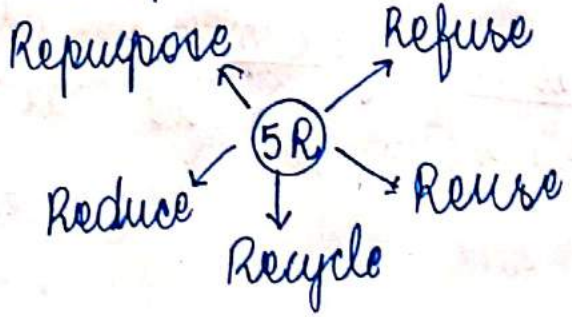
→ Remedial measures for restoration include :-

- Bioremediation : Introduction of micro-organisms and plants (eg - castor plant) for degrading pollutants.
- Sustainable farming : adoption of conservation agriculture, vermiculture, mulching etc.
- In situ revival : Biochar and enzymes.
- Proper maintenance of sewage system.
- Scientific waste collection and management of landfills.
- 'Waste minimization circles' for small industrial clusters.

⇒ Finally, to achieve Land Degradation neutrality (LDN) by 2030 (UNCCD) and SDG-15, public awareness and 5R approach is the key.



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19. Discuss the vulnerabilities of urban areas to disasters. What measures have been taken to minimise the losses in such areas during disasters? What further improvements would you suggest to make them more resilient? **(250 words) 15**

आपदाओं के प्रति शहरी क्षेत्रों की सुभेद्यताओं पर चर्चा कीजिए। आपदाओं के दौरान ऐसे क्षेत्रों में होने वाली क्षति को न्यून करने के लिए क्या उपाय किए गए हैं? आप उन्हें और अधिक लचीला (रिज़िल्यन्ट) बनाने के लिए क्या उपाय सुझाएंगे?

'Face of Disasters' report 2019 highlights the increasing vulnerability of urban areas to disasters.

Such vulnerabilities are -:

- Heat waves : Due to global warming and heat island effect.

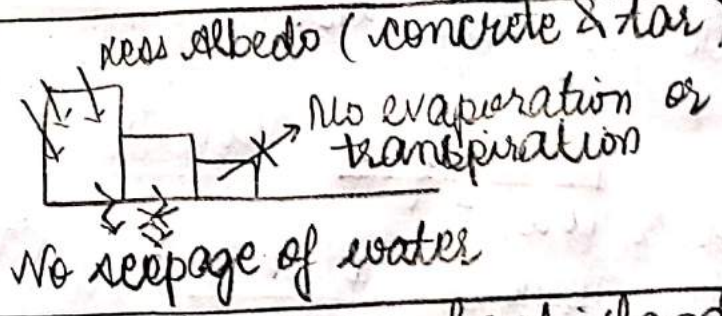

fig : Urban heat island

- Urban floods : It occurs due to increasing concretization, low seepage, and encroachment of flood plains, ponds and wetlands. eg : Uttarakhand ; Kerala.
- Industrial and chemical : Due to factories in urban and periurban areas ; unorganized sector, etc.
- Urban fires : It is due to faulty construction, illegal land use and lack of safety audits.

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eg: Recent Surat coaching centre fire

- Earthquakes : Vulnerability is multiplied due to high population density and haphazard urbanization.
- Terrorist attack : Urban terrorism is preferred due to instant media coverage, sleeper cells, anonymity, easy recruitment and critical infrastructure damage.
- Others : Infectious diseases (Nipah virus, JE virus)
  Sea level rise
  Desertification, etc.

→ Measures taken to decrease losses are :-

- City disaster management plans and SOP formation by ULBs.
- DDMA : District Disaster management authority is the nodal body coordinating guidelines of NDMA and SDMA.
- Structural measures
  - Building codes
  - Land use plans
  - Fire safety equipments, exits etc.
  - Retrofitting
  - Earthquake resilient buildings

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- Non structural measures:-
  - Capacity building of police and fire services
  - Fire safety audits
  - Early warning systems
  - Mock drills
  - Awareness generation by involvement of NGOs, schools & colleges etc.
  - Action plans.

  eg: Ahmedabad heat wave action plan

→ For increasing resilience, improvements can be:-

- No knee jerk reactions, but apply concept of 'Build Back Better'
  eg: Post floods, desiltation of all water bodies.
- International best practices adoption.
  eg: China's sponge cities
- Formulation of Urban Risk assessment framework with participation of civil society and experts
- Special mitigation plan for migrants (most vulnerable)

⇒ It should further be supplemented by a credible financial framework to disaster proof cities.

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20. What is Community Based Disaster Management (CBDM)? Highlight its main principles, features and significance for resilient disaster preparedness in India. **(250 words) 15**

समुदाय आधारित आपदा प्रबंधन (CBDM) क्या है? भारत में लचीली (रिज़िल्यन्ट) आपदा तैयारियों हेतु इसके मुख्य सिद्धांतों, विशेषताओं और महत्व पर प्रकाश डालिए।

According to UNISDR community preparedness reduces disaster impact, especially number of lives lost.

Principles of CBDM are:-

- Decentralized disaster management is the key.
- Community involvement to form risk assessment framework and disaster reduction plan
- Participatory monitoring and evaluation.
- Focus is especially on vulnerable groups like SC, ST, senior citizens, children and animals.
- Formation of DMC (Disaster management committee) with all stakeholders:-

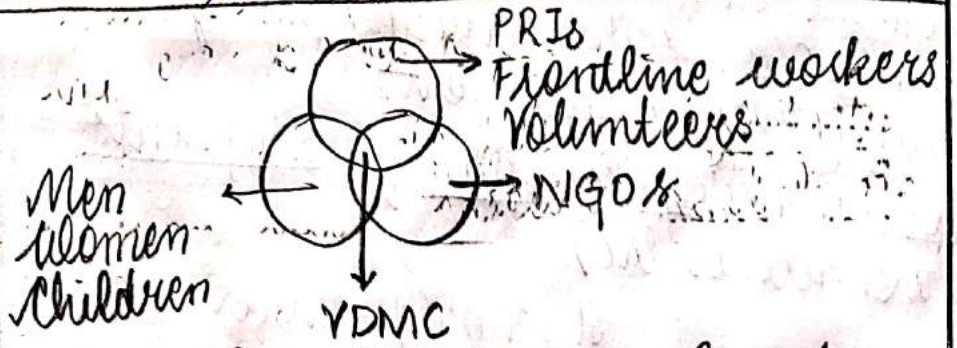

fig: VDMC | Village Disaster Management Committee

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Main features of CBDM :-

- Responsibility is entrusted to local bodies.
- HVRA - Hazard, vulnerability and risk assessment is done first.
- It is followed by resource mapping (inventory).
- Risk reduction planning and EWS is established.
- Post disaster, monitoring and evaluation, and relief is provided.
- Capacity building is done with mock drills, awareness in schools, colleges, society etc.
- Involvement of NGOs and other civil society actors as facilitators.

A People at risk (Agents of change in CBDM) ⇄ B Government

↑

Facilitators : Bring A and B together (local actors : NCC, NSS, NGOs, ANM, AWW, gram sevak

- address underlying risks : Eg: Malnutrition in children

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Significance of CBDM:-

- Community is first responder.
- Aid in first hour / golden hour is the most precious to save lives.
- Resources and relief can be better distributed.
- Psychosocial rehabilitation can be done by society only, as the people know each other's economic status pre-disaster.
- To 'build back better', cooperation of society is required. Eg - Retrofitting of homes.
- Use of traditional knowledge and skills.

⇒ The importance of CBDM is thus not only during disaster, but also crucially after it, as the recent example of Kerala floods shows. Females weaved 'Chekutty dolls' from saled sarees to rehabilitate post disaster.

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GENERAL STUDIES (TEST CODE : 1432)

Name of Candidate	DARPAN AHLUWALIA		
Medium Eng./Hindi	ENG.	Registration Number	214713
Center		Date	10th JULY '19

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar Delhi- 110009

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EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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1. Explaining the reasons behind India's lower female labour force participation rates (LFPR), list the steps that have been taken to augment it. What more needs to be done? **(150 Words) 10**

भारत की निम्न महिला श्रमबल भागीदारी दर (LFPR) के पीछे उत्तरदायी कारणों को स्पष्ट करते हुए, इसे बढ़ाने हेतु उठाए गए कदमों को सूचीबद्ध कीजिए। साथ ही, बताइए कि इस दिशा में और क्या किए जाने की आवश्यकता है?

High female LFPR is integral to SDG 1 and 5 (gender equality). It has declined to 24% (Economic Survey 2018).

Reasons behind a low percentage :-

- SUPPLY side factors :-
  - (UN-Women) 50% women drop out of labour force post marriage.
  - Increase in household income leads to crowding out of females.
  - Underlying social norms - child birth and care; ceremonies; elderly well being etc.
  - Domestic duties are unpaid, hence not included as work.
  - Other issues : Menstrual taboos; mobility; poor skill set; safety etc.
- DEMAND side factors :-
  - Non gender neutral laws, eg - Maternity Benefit act, leads to employer preference for men.

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- Demand for highly skilled jobs; automation increase; digital divide etc. create less opportunities.

Steps taken :-
- Funds : Rashtriya Mahila Kosh; Nirbhaya fund; Maternity Benefit etc.
- Safety : Prevention of sexual Harassment at workplace act; Toilets; Working women hostels.
- Skills : STEP scheme; Start up India; Stand Up India; MGNREGS.
- Mobility : Female conductors and drivers; separate Metro and train compartments
- Laws : Equal Remuneration act; Wage code; Article 39d (equal wages), etc.

To complement this, following needs to be done :-
- Gender neutral laws : Eg: Maternity benefit act, to not stereotype role of women.
- International practices : Nepal → Home based care of children with mothers taking turns.
- CSR : Eg: Unilever's Shakti program.
- Employment : Explicit sex ratio in every department; apprenticeships etc.

⇒ These need to be urgently done as 10% increase in LFPR leads to $700Bn increase in GDP.

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2. By rebalancing project risks between the public and private sectors, the HAM model has encouraged investments in the road infrastructure sector. Discuss. (150 words) 10

सार्वजनिक और निजी क्षेत्रकों के मध्य परियोजना जोखिमों को पुनर्संतुलित कर, HAM मॉडल ने सड़क अवसंरचना क्षेत्रक में निवेश को प्रोत्साहित किया है। चर्चा कीजिए।

India has the largest PPP in road infrastructure globally. The HAM (Hybrid Annuity Model) has potential to increase it further.

Mechanism: HAM
- 60% BOT-Annuity
- 40% EPC

NHAI releases 40% cost → 60% cost by developer → Assets created → Annuity to private player depending upon value created

	Financial risk	Revenue risk	O&M
- BOT Annuity	Private	Govt.	Private
- EPC	Govt.	Govt.	Govt.
- HAM	Govt. + Private	Govt.	Private

Rebalancing of project risks :-
- Government pays only 40% cost initially.
- Better debt availability to private play in case of HAM.
- No toll/revenue risk to private player.

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- Government revenue is high as there is no underreporting by private sector.
- Overall capital availability for infrastructure augmented.
- 90% land acquisition and major clearances already on board, decreases time and cost overruns.
- Inflation adjustment in project cost is done.

Hence, it is a win-win situation for infrastructure, government and private sector.

However, certain risks remain :-
- Administrative hurdles
- Poor grievance redressal mechanism leads to litigations
- Funding constraints with twin Balance sheet syndrome.

⇒ Hence, it is pertinent to follow Kelkar committee recommendations of basing contracts on services, not fiscal benefits. Further, there needs to be an Institute of Excellence in PPP.

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3. Examine the need for a comprehensive policy on e-commerce in view of its domestic expansion as well as safeguarding India's interests globally.
(150 words) 10

ई-कॉमर्स पर एक व्यापक नीति की आवश्यकता का इसके घरेलू विस्तार के साथ-साथ वैश्विक स्तर पर भारत के हितों की सुरक्षा को देखते हुए परीक्षण कीजिए।

e-Commerce sector has a growth rate of 17% per annum, with India leading per month per smartphone data usage at 7.85 GB (-ericsson).

Hence, to give thrust to domestic sector, while having high growth rate, with citizen centricity, a policy is required.

Need of such policy is :-

- Data : India is net data exporter. Regulations are required to make best use of Big Data and safeguard security and privacy.
- Domestic industry : To protect the domestic start ups, sandbox approach needs to be followed.
- Brick and mortar stores : Cartelization and heavy discounts online impact their viability.

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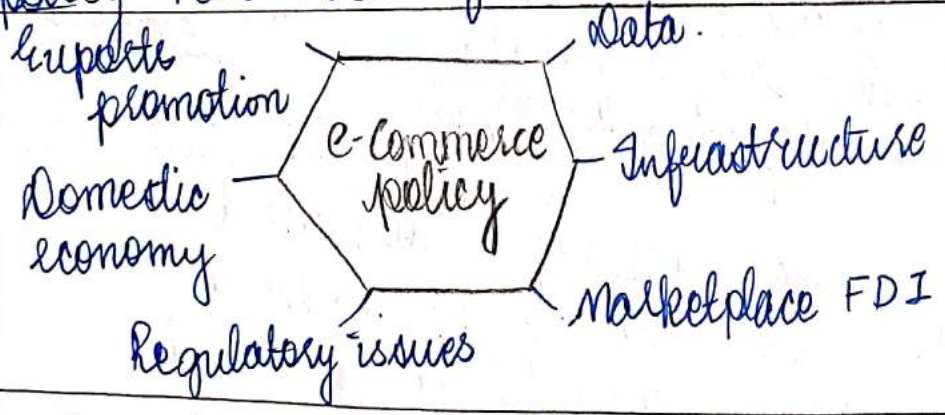
- Consumer interests : Eg - Quality concerns; expiry dates; false marketing; grievance redressal etc.

- Infrastructure : To have a guided policy on ease of doing Business by creating adequate infrastructure.

- Regulation : Eg - Taxation (France's GAFA tax); e-consumer courts; local entity presence etc.

To include all these concerns, the draft e-commerce policy has been formulated :-



⇒ Further, there is a need to take part in WTO e-commerce negotiations and create a 'plug and play' model for domestic startups to form a $5Tn economy.

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4. In view of the growing significance of FinTech innovations, discuss the potential and challenges of mainstreaming FinTech in Indian economy. (150 words) 10

फिनटेक (FinTech) नवाचारों के बढ़ते महत्व को देखते हुए, भारतीय अर्थव्यवस्था में फिनटेक को मुख्यधारा में लाने की संभावनाओं और चुनौतियों पर चर्चा कीजिए।

India stands second in the Fintech Adoption Index (-EY). It will form the further basis of growth of Digital India and Make In India.

Its significance and potential are:-

- It can utilize increase in smart phone penetration to 64%, and increase in data usage (9.85 GB/phone/month).
- It can create more financial inclusion via online loans, insurances and payment.
- Potential to foster rural micro-entrepreneurship via CSC infrastructure.
- Better targeting and less leakages, leading to decrease in subsidy bill.
- Tap transactions transparently, and

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thereby increase tax base.

But, challenges are :-
- Indian market is traditionally cash oriented, and MSME dominant.
- Ambitious investment is required to fulfill Bharat Net targets.
- Lacunae in cyber security.
- It can be hindered by poor digital and financial literacy.
- Issues related to cryptocurrency → Banned by RBI.
- Lesser seed capital available to fintech start ups.

⇒ Hence, to give it stimulus, a Funds of funds for MSMEs should be formed, with a 24x7 helpline. Cyber security and awareness should be increased. Fintech conclaves and regulatory sandbox by RBI is the way forward.
Bali Fintech Agenda should be adhered (IMF-World Bank) to.

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5. With India striving to achieve its development objectives, examine how blue economy can help in pursuing the objectives of economic development and ecological sustainability. (150 words) 10

भारत द्वारा अपने विकास उद्देश्यों को प्राप्त करने के प्रयास में, परीक्षण कीजिए कि किस प्रकार नीली अर्थव्यवस्था आर्थिक विकास और पारिस्थितिकीय संधारणीयता के उद्देश्यों को प्राप्त करने में सहायता कर सकती है।

India aims at inclusive growth and $5 Tn economy target by 2024. With 7517 km coastline and 2 mn km² EEZ, Blue economy becomes important to achieve it.

- Economic Development :-

* Mariculture exports : It will lead to increase in farmers income and forex earnings.
* Natural resources and minerals : eg : Rare earth elements; PMNs etc. can be used in high tech electronics etc.
* Shipping Industry : It will create optimal multimodal mix, and decrease in logistics cost (currently : 14% of GDP).
* Tourism : It will provide employment to youth of coastal

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communities, and has many forward and backward linkages.

- Ecological sustainability :-
  * Waste management : Waste and effluent treatment will help in achieving SDG 14.
  * Shelterbelts : Greening of coastal areas will create carbon sinks and buffer against storm surge, cyclones etc.
  * New technologies : eg : 3D printing of reefs; bioremediation etc.
  * Maintaining biodiversity : Ban on bottom trawling ; TEDs (Turtle Exclusion devices) ; 60d moratorium on fishing in breeding season (B. Meenakumari committee) etc.

⇒ To achieve these, sovereign blue bonds (like Seychelles), and mitigating associated problems like trafficking of drugs and arms, oil spills, marine pollution, fish overexploitation etc. is needed.

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6. Reliance on borrowings for capital expenditure in railways reflects a weakening financial position. Comment on the statement and discuss ways in which better resource generation and utilisation can be achieved therein.

(150 words) 10

रेलवे में पूंजीगत व्यय के लिए उधारी पर निर्भरता कमजोर होती वित्तीय स्थिति को प्रतिबिंबिति करती है। इस कथन पर टिप्पणी कीजिए तथा उन उपायों पर चर्चा कीजिए जिनसे इसमें बेहतर संसाधन सृजन और उपयोगिता प्राप्त की जा सकती है।

Operating ratio of Railways has decreased from 98.4% (2017-18) to 95% (Budget 2019).

However, reliance on borrowings is still a big concern.

Eg: IRFC has taken recently ADB's largest loan till now.

This is because of:-

- Post 7th Pay Commission, increase in salaries and pensions.
- Modernization projects (Eg - LHB coaches; 100% electrification)
- High operating ratio (More than 95%) because of cross subsidization (of passenger trains).
- PPP route yet to be explored. (Debroy committee)
- Other activities (non core): schools, hospitals etc.

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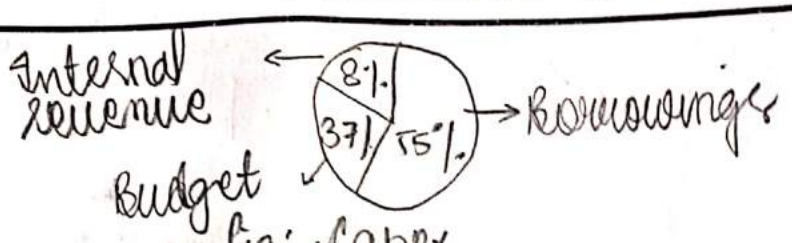

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For better resource generation :-

- Utilize Nirbhaya fund (eg - CCTV cameras) and CRIF (Central Road and Infra fund)
- Non fare revenue - Advertisements; piezoelectric sheets on station floor; solar panels; lease land.
- PPP - Public sector tracks with private rakes (Debroy committee)

For better resource utilization :-

- Free WiFi and other amenities only at busy stations.
- Come out of peripheral activities like schools/hospitals/catering etc.
- Use of cost efficient technology.
- Fast tracking of DFCs and high-speed rails.
- Better connectivity with dry ports and logistics parks.

⇒ All these will aid in improving its financial position.

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7. With water increasingly becoming a scarce resource, large scale adoption of micro irrigation techniques could prove to be a game changer in India. Analyse. Also enumerate various steps taken by the government to promote micro irrigation in India.

(150 words) 10

जल के उत्तरोत्तर दुर्लभ संसाधन बनते जाने के कारण, भारत में सूक्ष्म सिंचाई तकनीकों का व्यापक पैमाने पर अंगीकरण निर्णायक सिद्ध हो सकता है। विश्लेषण कीजिए। साथ ही, भारत में सूक्ष्म सिंचाई को बढ़ावा देने हेतु सरकार द्वारा उठाए गए विभिन्न कदमों को भी सूचीबद्ध कीजिए।

Farming sector consumes more than 80% of fresh water today. With declining productivity and scarcer water, microirrigation is at the core of more crop per drop.

Microirrigation refers to direct application of water above and below soil surface.
eg - Drip and sprinkler irrigation.

It can be a game changer as :-
- It can arrest water table depletion.
- Runoff will reduce, leading to less contamination of water bodies.
- Fertilizer use efficiency will improve due to direct targeting of root zone
- Subsidy bill will decrease due to less water and power usage.

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- It is useful especially in dry land farming.

Various steps taken are :-

- PM Krishi Sinchai Yojana - It focuses on improving more crop. per drop.
- National Mission on Sustainable Agriculture - Microirrigation extension activities, subsidized equipments, machine banks etc.
- NABARD - Microirrigation fund of ₹5000 cr to give credit for such activities.
- Extension services, targeting farmers, FPCs and FPOs by KVKs and CSCs.
- MSP incentives : Increased for coarse cereals (nutricereals) i.e. low water guzzling crops.

⇒ Further, Vaidyanathan committee recommends to price irrigation water, which will decrease usage via behavioural economics (Economic Survey 2019). Model farms and farmer led revolution remains the key

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8. Livestock farming not only contributes to climate change but is also affected by it. Elaborate the statement and discuss some measures that can be taken to make livestock farming more sustainable as well as resilient.

(150 Words) 10

पशुधन खेती (लाइवस्टॉक फार्मिंग) न केवल जलवायु परिवर्तन में योगदान देता है, बल्कि इससे प्रभावित भी होता है। इस कथन का सविस्तार वर्णन कीजिए और पशुधन खेती को अधिक संधारणीय के साथ-साथ लचीला (रिज़िल्यंट) बनाने हेतु उठाए जा सकने वाले कुछ कदमों की विवेचना कीजिए।

According to 19th livestock census, India has the highest population at 125cr. Its importance is especially for small farmers as it gives food and economic security, both.

But it also contributes to climate change:-

- 14.5% greenhouse gases are released due to primary sector
- Dung releases methane, carbon dioxide, nitrogen dioxide etc.
- Enteric fermentation is caused due to methanogenic bacteria in intestine.
- Destruction of tree cover to create pasture land and farms
- Use of solid dung cakes for cooking also causes air pollution and climate change.

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Impact of climate change :-

Direct
- Heat stress
- Exhaustion
- Decline in productivity
- Death

Indirect
- Fodder scarcity
- Disease spread
- Less nutrition
- Infections
- Less milk yield

→ In order to make it more resilient :-

- 100% vaccination should be ensured.
- Filling up of all vacancies in veterinary hospitals
- Adequate funding and technicians, for ART, semen banks, etc. for indigenous breeds.
- Provision of fodder banks and cattle ponds
- Timely disease surveillance

→ In order to make it more sustainable :-

- Adequate use of Dairy development and Infrastructure fund.
- Assistance to cooperatives - credit; bulk milk chillers; quality certification; marketing etc.

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9. The cropping pattern of a region is influenced by geo-climatic, socio-cultural, economic, historical and political factors. Substantiate with relevant examples. **(150 words) 10**

किसी क्षेत्र का शस्य प्रतिरूप भू-जलवायविक, सामाजिक-सांस्कृतिक, आर्थिक, ऐतिहासिक और राजनीतिक कारकों से प्रभावित होता है। प्रासंगिक उदाहरणों के साथ पुष्टि कीजिए।

India grows multiple crops with multiple varities (for eg: Aus, Aman and Boro of rice) due to following factors influencing cropping pattern:-

- Geoclimatic :-
  - Precipitation - Low: Coarse grains (eg - Rajasthan)
    High: wet paddy (eg - Assam)
  - Topography
    eg: Tea, coffee plantations on hill slopes (Assam; Darjeeling; Kerala)
  - Soil
    eg: Black cotton soil in Deccan plateau
    Laterite soil → Tea; coffee; rubber etc.
  - Insolation
    Shift of sugarcane belt from north to south due to higher insolation, leading to more sucrose content and growth period.

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- **Agricultural** :-
  Eg - Rice eating belt in East and South (Black rice - Manipur)

- **Economic** :-
  - Price : Wheat - Rice cycle in Punjab
  - Farm size - [Less : Subsistence farming. Large : Commercial, extensive farming
  - Labour : Eg : Plantations in North East
  - Other inputs : subsidized seeds; chemicals; marketing etc.

- **Historical** : Tea plantations in Assam, Darjeeling etc.

- **Political** :-
  It includes factors like MSP (inter-crop disparity), subsidies etc.

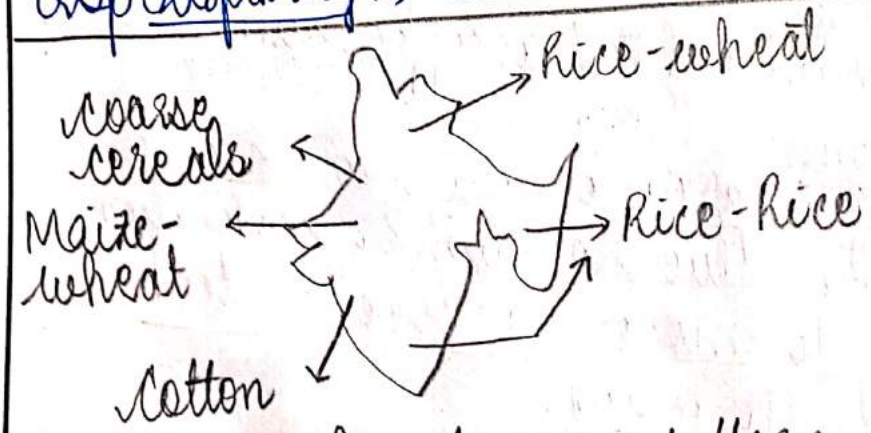

fig: Cropping pattern

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10. A developed Inland Waterway Transport (IWT) will not only augment the overall transport capacity of the country, but also help correct the multi-modal transport mix. Discuss. **(150 words) 10**

एक विकसित अंतर्देशीय जलमार्ग परिवहन (IWT) न केवल देश की समग्र परिवहन क्षमता को बढ़ाएगा, अपितु इससे मल्टी-मॉडल परिवहन मिश्रण को सुधारने में भी सहायता मिलेगी। चर्चा कीजिए।

With Jal Marg Vikas Yojana (IW-1), and multimodal logistics parks at Jogighopa (Assam), and other projects, India is set to utilize 14,500 km of inland waterways.

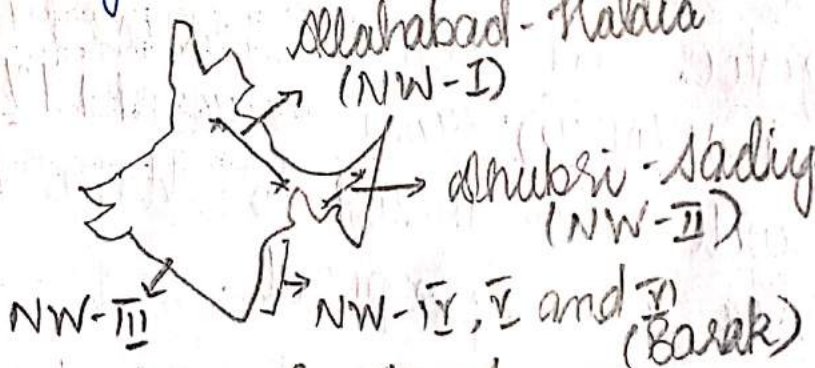

fig: Inland waterways

It will augment transport capacity by:-

- Addition of capacity of 14,500 km of waterways.
- It is the cheapest mode with no land acquisition and minimal infrastructure.
- It is easy to transport heavier cargo.
- carbon footprint also decreases.

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- International connectivity - eg: Waterways in North East connecting with Myanmar and Bangladesh.

It will correct multimodal mix as :-
- It will declog roads and railways.
- It will thus cause less time and cost overruns.
- Logistics cost can be reduced to 10% of GDP (OECD) from current 14%.
- It will give thrust to Make In India and employment.

⇒ However there are concerns like :-
- Low water depth for larger vessels.
- Multiple bodies (eg: Port authorities, state governments etc.)
- Oil spills, marine pollution etc.
- Restrictions on sea-river movement.

⇒ Hence, need is of coordination between states and DG, shipping, timely dredging, greater autonomy to IWAI and PPP utilization.

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11. Can the consolidation of banks help in stemming the existing problems in the banking sector? Discuss. (250 words) 15

क्या बैंकों का समेकन बैंकिंग क्षेत्रक में वर्तमान समस्याओं से निपटने में सहायता कर सकता है? चर्चा कीजिए।

From Narsimhan committee of 1991 to PJ Nayak committee of 2014, consolidation of banks is a common thread.

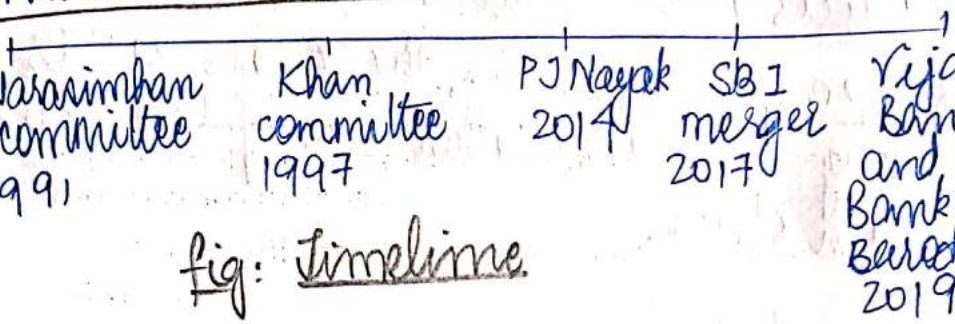

fig: Timeline

It serves following benefits :-

- Economy of scale : It leads to better resource utilization and efficiency.
- More capital : Greater liquidity is created. Eg: SBI became one of top 50 largest banks.
- Shock bearing capacity : Stronger bank can absorb losses of weaker bank.
- Geographical reach : For eg - Vijaya bank in South and, bank of Baroda in Western India.

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- Liquidity : Greater capital base
  ↓
  More liquidity
  ↓
  Lending
  ↓
  Increase investment
- Corporate governance : Best governance practices are imbibed.
- Efficiency : Currently, there are 21 PSBs leading to cannibalization of business of each other.

However, it creates following problems :-

- Employee concerns : Different work culture ; retrenchment ; reallocation of work etc.
- Overlapping branches : Some have to be closed, hence, impacting financial inclusion.
- Technology platforms : Issues w.r.t. their convergence.
- Fall on stronger bank : Due to high

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NPAs of weaker bank.

- Corporate governance ethics : Government takes the call, being the dominant shareholders (Alternative Mechanism). This is anti thetical to other bank shareholders.
- Alone : There is no one solution. Other 'Indradhanush' reforms are also needed.

⇒ Thus, consolidation can stem problems if complemented with strong credit appraisal, risk management, and other 3Rs of recapitalization, recognition and resolution. It should be guided by commercial considerations, not political, in accordance to Narasimhan committee model :-

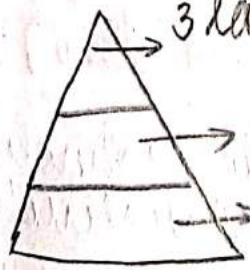

fig: Narasimhan committee

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12. Why has the contribution of manufacturing sector, as a percentage of the GDP, remained stagnant in the recent years? In this context, analyse the achievements of National Manufacturing Policy, 2011 with regards to its intended objectives. **(250 words) 15**

विगत वर्षों में GDP के प्रतिशत के रूप में विनिर्माण क्षेत्रक का योगदान स्थिर क्यों रहा है? इस संदर्भ में, अपने लक्षित उद्देश्यों के संबंध में राष्ट्रीय विनिर्माण नीति, 2011 की उपलब्धियों का विश्लेषण कीजिए।

Manufacturing sector contribution has remained stagnant since 1980s (16% of GDP). It is crucial as 97 lakh enter workforce every year. (Economic Survey 2019)

Causes of stagnation :-

- Dwarf firms : (less than 100 employees and age more than 10 yrs) This is due to perverse incentives.
  Eg : Industrial dispute act : Applicable on factories with more than 100 workers

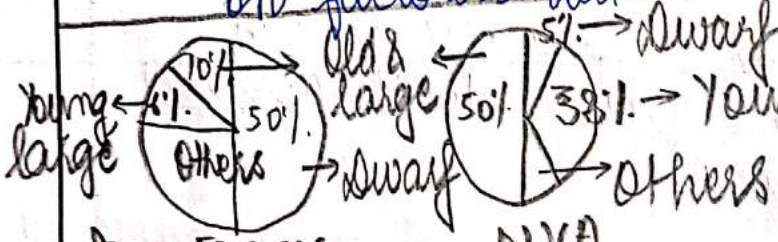

fig: Firms (numbers) NVA (contribution)

- Technology : Obsolete technology usage leads to lesser productivity, diversification and competitiveness.

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- Rigid labour laws : eg :-
  - More than 44 central and state laws
  - Retrenchment threshold is low (100)
  - Overtime hours are less at 50/quarter
- Logistics cost : 14% of GDP
  There is inadequate multimodal connectivity and shortage of warehouses.
- FTAs : eg : Bangladeshi tariffs less in EU due to coverage under EBA initiative ('Everything But Arms').
- Taxation : High corporate tax (25%/30%); invested tax duties; high customs on inputs (10% + cess).
- Labour : There is industry-academia gap leading to gap between skill demand and supply.
- Land laws : Restrictions on FSI, land conversion rules etc.

⇒ The NMP 2011 aims at increasing its share to 25% of GDP (2022) via :-

- Decreasing logistics cost.

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- Increase export share
- Diversification of goods, and market
- Establishment of NIMZ
- Easy exit policy for start-ups
- Creation of land banks
- Focus on MSMEs and labour intensive sectors

NMP 2011 has led to :-

- 70 L jobs have been formalized between 2015-18. (NASSCOM)
- NIMZ, CEZ, Industrial corridors etc. have led to more exports.
- Multi Modal logistic parks have led to decrease in time and cost.
- GST and other tax benefits have led to tax compliance ease. (Eg: Corporate tax reduced to 25% for ₹400cr upto turnover).

⇒ However, certain lacunae still remain, like small and unviable NIMZ, angel tax issues, multiple policies (CEZ/SEZ/DMIC/NIMZ) leading to thin spreading of resources and policies favouring small rather than young firms. These need to be revamped.

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13. One of the goals that a developing economy aspires for is to bring down the Incremental Capital-Output Ratio (ICOR). In this context, what are the constraints that underlie the efficient conversion of savings rate to investments in the Indian economy? Also suggest some measures to improve this efficiency. **(250 words) 15**

एक विकासशील अर्थव्यवस्था जिन लक्ष्यों की आकांक्षा रखती है उनमें से एक वृद्धिशील पूंजी-उत्पाद अनुपात (इंक्रीमेंटल कैपिटल-आउटपुट रेश्यो: ICOR) में कमी लाना है। इस संदर्भ में, भारतीय अर्थव्यवस्था में बचत दर के निवेश में कुशल रूपांतरण के समक्ष आने वाली बाधाएँ क्या हैं? साथ ही, इसकी कुशलता में सुधार हेतु कुछ उपायों का भी सुझाव दीजिए।

ICOR refers to the additional unit of investment / capital required to increase output unit.

i.e.; $\boxed{ICOR = \frac{\text{Annual investment}}{\text{Annual GDP increase}}}$

→ Savings and investment have a vicious cycle effect (Economic Survey 2019) on ICOR decrease and GDP growth :-

Savings → Precautionary savings
Savings → Investment
Investment → growth; Decrease in ICOR
growth → Savings

But Indian economy is currently facing investment slowdown because :-

- Savings : GDP ratio is 29%, and Investment is 26% of GDP.

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- Household savings are declining. They are being put into financial assets.
- Investment requires high/long term liquidity, but savings are put into short term, easy liquiditable instruments.
- Mounting NPAs : Credit offtake is expensive and lesser.
- Policies :- Restrictive labour and land laws
  - Dwarf firms perverse incentives
  - High corporate tax
- Legal system: Poor enforcement of contracts, leading to capital getting stuck, and time and cost increases.

Its efficiency can be improved by :-

- Labour codes : Amalgamation of 44 labour laws into 4 codes.
- Incentivize : Young firms, not dwarf firms; grandfathering of incentives.
- Logistics : Decrease to 10% of GDP cost by thrust on multi-modal parks, dry

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ports etc.

- Susjit Bhalla committee : Reforms in taxation ; long term infra bonds i.e. elephant bonds (from income declaration schemes).
- Focus on labour intensive industries ; Eg: Apparel ; textiles ; leather etc.
- Technology : It will lead to greater competitiveness, and better management system, via technology upgradation fund, industry-academia linkage, upskilling and reskilling labour.
- Online portal / Helpline : To connect with Ministry of Commerce, and Corporate Affairs.
- Multilateral level : Participate in WTO e-commerce negotiations ; thrust on Bilateral Investment Treaties.

⇒ The recently formed Cabinet Committees on Employment, and Skill Development will also aid in this. Thrust of efficiency improvement should be on MSMEs (45% manufacturing output).

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14. Highlight the factors responsible for rise in the number of start-ups in India in recent years. Analyzing the challenges in the existing start-up ecosystem, suggest some measures to resolve them. **(250 words) 15**

विगत वर्षों में भारत में स्टार्ट-अप की संख्या में वृद्धि के लिए उत्तरदायी कारकों पर प्रकाश डालिए। वर्तमान स्टार्ट-अप पारितंत्र की चुनौतियों का विश्लेषण करते हुए, उनका समाधान करने हेतु कुछ उपायों का सुझाव दीजिए।

India has the 3rd highest number of start ups (NASSCOM). With the 5Ds: Democracy, demography and demand, Indian startups have emerged due to the following factors :-

- Continuum of change : Innovators are encouraged since school; eg - Atal Tinkering labs; JIGYASA programme (KVIC-CSIR) etc.
- Ecosystem creation : RBI's regulatory sandbox for fintech start ups; livelihood and business incubators.
- Definition : Amended to extend benefits to < less than ₹100 cr turnover, less than 10 yrs age.
- Labour : 95 L youth enter labour force every year.
- Funds : Funding less than ₹25 cr exempt for angel tax; SIDBI's Fund

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of Funds ; credit guarantee fund etc.

- Market : Increase in base with rising aspirations of middle class ; increase in smartphones and data usage ; preferential public procurement etc.

However, there are some challenges :-

- Funds : Difficult to access SIDBI's Fund of funds ; perverse incentives to dwarf firms.
- global market : Challenges due to increase in protectionism ; non-tariff barriers (eg- quality certificates)
- Logistics cost : It is at 14% of GDP.
- Angel tax : Multiple IT notices under section 56 of IT Act.
- Clearances : Marred by bureaucratic red tapism ; increasing litigations ; vested interests.

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Measures to reduce them are :-

- Online portal / helpline : to have a single window for availment and awareness of benefits.
- PPP think tank institution (- Kelkar committee) needs to be set up.
- Start up fests and conclaves to showcase latest products.
- Land Bank corporation to ease out land acquisition.
- Research parks ; innovation hackathons etc.
- Intellectual property awareness in colleges, schools, etc.
- Convergence of MMLP policy with technology and business incubators, to increase synergy.

⇒ Finally, there should be a 'plug and play' model for start-ups in unique sectors like food processing, fintech, tourism, etc.

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15. There is a high cost of compliance as well as complexities associated with existing labour laws at centre and state levels. Discuss. What steps have recently been taken by the central government to address these challenges? **(250 words) 15**

केंद्र और राज्य स्तरों पर वर्तमान श्रम कानूनों के साथ अनुपालन की उच्च लागत के साथ-साथ जटिलताएँ भी जुड़ी हुई हैं। चर्चा कीजिए। इन चुनौतियों से निपटने के लिए केंद्र सरकार द्वारा हाल में क्या कदम उठाए गए हैं?

Rigid labour laws are a hindrance to Make In India. 70% employees are in firms with less than 20 employees, and are only producing 12% output. (NITI Aayog).

High compliance cost and complexity is due to :-

- Retrenchment : Threshold is very low at 100.
- Overtime Hours : They're capped at only 50/quarter.
- Concurrent list : (Labour) hence, multiple State and Central laws.
- Apprenticeship : There is very less focus on apprentices. Eg: India : 2.8 Lakh, Germany : 30 Lakh
- Laws provide perverse incentives to stay 'dwarf' (less than 100 employees).

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eg : Industries Dispute act : Applicable to industries with more than 100 workers.

- 44 labour laws : Multiple and overlapping laws, leading to complexities and rent seeking.

→ Steps taken to address them are :-

- 4 labour codes
  - Occupational safety
  - Wages
  - Industrial relations
  - Social security

  Will subsume 44 labour laws.
- Fixed term employment in all sectors to meet seasonal surge.
- Maternity benefit act : Central government contribution to employer's expenses.
- National Apprenticeship scheme : 25% of stipend, and ₹7500 for training reimbursed

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- State led initiatives :-

Eg : Rajasthan : Flexibility in laws →
Factory act now applicable to :-
20 Workers with power → 40 Workers without power
(Previously, 10 and 20 workers - respectively).

- PM Shramyogi Maandhan Yojana :
Provision of ₹3k/month pension to unorganized sector workers.

⇒ Further, the thrust of compliance ease should be on MSMEs, and in high employment elasticity sectors, including services, to move towards a $5 Tn economy.

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16. The contribution of coal based power generation is not expected to substantially go down in the next few decades, despite growing importance of renewables. Comment on the statement in light of increasing demand for power in India. **(250 words) 15**

नवीकरणीय संसाधनों के बढ़ते महत्व के बावजूद, कोयला आधारित विद्युत उत्पादन के योगदान में अगले कुछ दशकों में मूलतः कमी आने की उम्मीद नहीं है। भारत में विद्युत की बढ़ती मांग के आलोक में इस कथन पर टिप्पणी कीजिए।

India is facing energy poverty with 17% of global population, but also 6% of energy usage. (Economic Survey 2019)

To mitigate this, it is aimed to generate more renewable energy (175 GW - 2022) but coal remains important as :-

- More than 60% generation is coal based.
- Premature closure of coal plants will disrupt banks' balance sheets.
- Investment already made should be utilized till plant lifetime.
- Abundant coal availability, and new sources like Coal Bed Methane (CBM).
- Base load provided, due to intermittency of renewable energy.

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- Increase in demand is estimated to be 2 times increase by 2030.
- Commercial mining has been started. It will lead to efficiency and improved technology.
- It is one of the cheapest sources for 100% electrification.
- Clean Environment Fund contribution from coal production (₹400/Tonne).
- New technologies like Flue Gas Desulphurization (FGD), coal gasification etc.
- Paucity of storage of renewable energy.

⇒ Hence, coal and renewable energy are interdependent. Contribution of coal should be gradually reduced, and technology should be enhanced.

Further, need of hour is Coal Commission of India, to protect livelihood of coal belt, and alternate use of coal. Eg:

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Non combustive usage (ammonia production, piped gas etc.)
[Dankuni coal complex supplies piped gas to Calcutta.]

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17. Elaborate the strategic and operational elements of the Agriculture Export Policy, 2018 and discuss the role it can play to achieve the target of doubling farmers' income by 2022. **(250 words) 15**

कृषि निर्यात नीति, 2018 के रणनीतिक एवं परिचालन-संबंधी तत्वों का सविस्तार वर्णन कीजिए और 2022 तक किसानों की आय को दोगुना करने के लक्ष्य को प्राप्त करने में इसके द्वारा निभायी जा सकने वाली भूमिका की विवेचना कीजिए।

Agriculture Export policy aims at doubling exports from $30Bn to $60Bn by 2022, in line with Dalwai committee objectives.

This is essential as global share is only 2.2% currently.

- Strategic elements:-
- State government involvement : Infrastructure (warehouse; cold chain; clusters); nodal department.
- Logistics : To decrease time and cost, especially of perishable commodities.
- Infrastructure : Eg- Agriculture Export processing clusters.

- Operational elements:-
- Quality control : Capacity building of assessors; awareness etc.

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- Diversification
  - Destinations
  - Basket (Currently, 52% are rice, wheat and marine exports)
- Focus on value addition.
- Certification : Promotion of 'Brand India'
- Harness private sector investment in infrastructure creation.
- Economy of scale : Export clusters
- Thrust on R&D.

⇒ It will play the following role in DFI-2022:-

- Decrease in pre- and post-harvest losses
- Private sector involvement will lead to increase in Contract Farming and Direct Marketing.
- Decrease market barriers, eg- phytosanitary barriers by focus on quality certification.

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- Cut down losses of perishable horticultural commodities, with access to cold storage and warehousing.
- Increase in diversification of crops grown by farmer will mitigate price shocks.
- Thrust to agriculture sector with start up support under the policy.
- Greater bargaining power of farmers with private sector participation, outside APMC ambit.
- Greater incentive to improve quality and productivity for export market.

⇒ However, agri exports declined from $36 Bn (2011) to $31 Bn (2017). So, lacunae need to be fixed like - reluctance to model APMC act adoption, paucity of land records, antibiotic and chemical overuse etc.

Further, GM crop trials should be reinvigorated, for producing heat tolerant and nutritious varities.

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18. Write a brief note on 'Dry Ports' and their significance in mitigating logistic challenges in India. Also, discuss the challenges in their development and measures needed to address them. **(250 words) 15**

भारत में लॉजिस्टिक्स की चुनौतियों को कम करने में 'शुष्क पत्तनों' एवं उनके महत्व पर एक संक्षिप्त टिप्पणी लिखिए। साथ ही, उनके विकास में आने वाली चुनौतियों और उनके समाधान हेतु आवश्यक उपायों पर चर्चा कीजिए।

'Dry port' is an Inland Container Depot (ICD) for temporary storage, and customs clearance of goods before shipment.

Eg : Largest ICD : Tughlaqabad, New Delhi

These are significant as there are 13 major and 187 minor ports, and thus play major role in 'Blue Economy'.

Multi-Modal connectivity ⇌ Dry port ⇌ Port → Export, Port ← Import

They mitigate logistical challenge as :-

- Overcome cargo constraints at small ports.
- Less cost to exporter due to lesser idle time of ship.
- Significant as 70% of value and

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95% by volume of exports via shipping route.

- Decrease in logistics cost from 14% of GDP.
- Revenue generation (eg - Container Corporation of India - CONCOR and CWC) → can be used in further decreasing logistics cost.
- This will lead to export competitiveness and increase in foreign trade.

Challenges in development :-

- Acquisition of land : Only large ICDs are economically viable.
- Investment : Large funds for infrastructure required.
- Multiple dry ports : It has led to underutilization of capacity.
- Transportation : Congestion and lack of multimodal connectivity to dry ports.

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Measures to address these are :-

- Harness PPP in dry ports.
- Connect expressways for ease of transportation.
- Convergence of industrial corridors with dry ports.
- Utilization index of each dry port - Improve facilities in profit making ones; consolidate smaller ones.
- Export Processing Clusters in vicinity of ICD will lead to better time and cost.

⇒ Further, there should be focus on especially the potential of North-East to export to East Asia and Southeast ~~via~~ due to abundant of viable land, inland waterways, ~~etc~~ and convergence with Act East policy and RCEP, in future.

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19. Development of food processing industry will help in achieving the twin goals of inclusive growth and food security. Discuss. Also, account for the competitive advantages enjoyed by India in the food processing sector. **(250 words) 15**

खाद्य प्रसंस्करण उद्योग के विकास से समावेशी विकास और खाद्य सुरक्षा के दोहरे लक्ष्यों को प्राप्त करने में सहायता मिलेगी। चर्चा कीजिए। साथ ही, खाद्य प्रसंस्करण क्षेत्रक में भारत को प्राप्त प्रतिस्पर्धात्मक लाभ का भी विवरण दीजिए।

Food processing is a sunrise industry with CAGR of 17%. It has potential to double agriculture exports ($30Bn) and farmer income.

It will help in achieving inclusive growth and food security by:-

- Inclusive growth:-
  - → It can mitigate agrarian distress by diversification of crops, export income and decreasing wastage.
  - → Potential of employment, and also forward and backward linkages (eg- transport, cold storage technicians etc.)
  - → Increase in exports will reap forex, which can be invested for social security schemes.

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→ It will foster rural entrepreneurship.

→ Potential for greater employability and skill development of rural youth.

eg: National Institute of Food Technology (Kundli)

- Food security :-

→ Decrease perishment of fruits and vegetables.

→ Mitigate 'hidden hunger' by increasing intake of poultry and protein based products.

→ Lead to value addition and quality in food.

→ Decrease post harvest loss via cold storage and warehouses.

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Competitive advantages enjoyed :-

- Highest livestock population (125 cr) (19th Livestock census)
- Diversity of produce - crops | fruits | vegetables | poultry etc.
- 100% FDI allowed
- Included under PSL lending } Funds
- Market < Domestic : Rising middle class
  - International : Proximity to importers → Middle East and Africa
- Labourforce
  - 95 L enter workforce | year
  - Skill development focus (eg → agri polytechnics; National Institute of Food Technology etc.)
- Technology : eg: BIRAC's food irradiation to improve shelf life ; food fortification.
- Start ups : 2nd highest agri startups.
- Taxation : Zero GST on fruits and vegetables.

⇒ All these give an opportunity to make SAMPADA scheme and food packs a success.

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20. Identify the problems faced by Indian agriculture as a consequence of changing land holding pattern as witnessed in the findings of Agriculture census, 2015-16. In light of these problems, suggest suitable ways to resolve such structural issues in agriculture. **(250 words) 15**

जैसा कि कृषि संगणना, 2015-16 के जाँच परिणामों में देखा गया है, परिवर्तनशील भू-धारण प्रतिरूप के परिणामस्वरूप भारतीय कृषि के समक्ष आने वाली समस्याओं की पहचान कीजिए। इन समस्याओं के प्रकाश में, कृषि में ऐसे संरचनात्मक मुद्दों का समाधान करने के लिए उपयुक्त उपायों का सुझाव दीजिए।

Land holding size has decreased from 1.15 Ha to 1.08 Ha on an average, and number of holdings has increased by twice in last 45 years. (2010-11)

It has led to following issues :-

- 67% farmers have land less than 1 Ha.
- Extension services become difficult.
- Mechanization is not cost effective on small plots.
- Technology infusion becomes lacking.
- collateral also decreasing, leading to non-institutional loans and increase in indebtedness
- It decreases bargaining power of farmer.
- It hinders diversification, agroforestry

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and mixed farming.

- It creates impediment to contract farming and direct marketing due to small plot.
- Higher cost of inputs as it isn't an economy of scale.
- Vulnerability is further increased as 92% of Scheduled castes' holdings are small/marginal.

⇒ Ways to resolve such issues :-

- Thrust to cooperative farming, FPO and FPC to form economies of scale.
- Connect to online markets → e NAM and GeAM.
- Diversification under Operation Green
- Non farm rural employment to augment low farm income.
- Utilize MGNREGS data (Economic Survey 2019) to identify distress pockets of small landholdings to

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provide cheap credit.

Overall, a cross-sectoral approach to alleviate rural distress is required with thrust on non-farm employment, skill development of rural youth in agrobased industries and create a scheme of 'Aspirational village programme' for convergence of all schemes.

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